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E. L. PERCY, ESQ. INVT. ET DEL. CAROLINE CLAYTON, SC.

Engraved for Morewood's History of Inebriating Liquors.

A

PHILOSOPHICAL AND STATISTICAL HISTORY

OF THE

INVENTIONS AND CUSTOMS

OF

ANCIENT AND MODERN NATIONS

IN THE MANUFACTURE AND USE OF

INEBRIATING LIQUORS;

WITH THE

Present Practice of Distillation in all its varieties:

TOGETHER WITH AN EXTENSIVE ILLUSTRATION OF THE

CONSUMPTION AND EFFECTS OF OPIUM,

AND OTHER STIMULANTS USED IN THE EAST, AS SUBSTITUTES FOR WINE AND SPIRITS.

BY

SAMUEL MOREWOOD, ESQ.

COLLECTOR OF EXCISE.

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TO THE

RIGHT HONORABLE THE EARL OF RIPON,

THIS WORK

IS,

MOST RESPECTFULLY, DEDICATED,

BY

HIS LORDSHIP'S OBLIGED AND VERY OBEDIENT,

HUMBLE SERVANT,

THE AUTHOR.

PREFACE.

FOURTEEN years having elapsed since the first publication of this work, and the design having met the approbation of many respectable writers, the Author is induced to offer to the public an improved edition, amplified, extended, and rendered more worthy of attention by the addition of new, original, and valuable matter. Hopes were indeed entertained that, as this was the first publication on a subject hitherto untouched by any writer in the British empire, it would have excited the curiosity and employed the talents and research of other individuals more at leisure; nothing, however, during such a lapse of time, has been offered to the public exactly on the plan of this undertaking.

In the London Dispensatory, quotations have been made from this work, and the Author was a little flattered to find his labours valued, and a portion of them ingeniously condensed into the compass of a Table, exhibiting, at one view, the numerous descriptions of inebriating drinks, with the countries where, and the

materials whereof they were made; and which Table has been since transcribed into other books. The design and plan, as well as the execution of this work, have been approved of by the late respected Dr. Duncan, of Edinburgh, who, in his Dispensatory, was pleased to rank it amongst the best publications on the subject, whether foreign or domestic. Immediately after its appearance, a History of Wines was published by Dr. Henderson, founded on that of Sir Edward Barry (a work of great research, labour, and industry, alike creditable to his taste and talents); but that volume, being solely confined to the subject of wines, did, by no means, include the extensive views embodied within the compass of this work. Since the appearance of Dr. Henderson's book and that of the Author, several publications have issued from the press, either modelled on their plan, or derived from their matter and sources; yet none embracing the wide range taken in this publication. Whatever may have been the opinions of the limits or defects of the first edition, the Author presumes that, while its original matter has been carefully preserved, it has also been greatly increased from more extensive and laborious researches, supplying every thing that may render it useful to the merchant, interesting to the speculatist, entertaining to the general reader, and calculated to be a safe guide to the practical brewer and distiller. To avoid interrupting the narrative, almost the whole of the Tables have been thrown into an Addenda, and in the body of the work those only have been retained, which are either absolutely necessary to

illustrate the subject, or which afford to the man of business a clear view of the various branches of commerce connected with the wine and spirit trades. For the same reason, as the work has not been divided into chapters, a copious, introductory Table of Contents is given, by which means the reader is at once guided to the part wanted, while the Index affords a more minute reference to details.

The processes of Brewing and Distilling, according to the most approved modern methods, are, it is presumed, so amply and intelligibly detailed, that by a careful observance of the instructions given, any man may become his own brewer or distiller, and may also with confidence calculate on the probabilities of the successful, or unsuccessful, result of his speculations. To these important matters are added epitomes of the laws, by which those trades have been and are still governed, with the estimated advantages and disadvantages of their application.

Descriptions of the several instruments used by Brewers, Distillers, Merchants, and Officers of the Revenue, are given, with a statement of the principles on which they are constructed, rendering their application easy and familiar to every capacity. The nature and properties of alcohol are detailed, and the various substances from which it may be obtained are minutely described, with the relative value of the several vegetables or other materials that yield it.

In the article on Opium and other vegetable inebriants, great care has been taken to bring under review their

effects and properties, whether resorted to as stimulants to sensuality, or for medicinal uses, alike illustrative of the general subject, and affording information to the practical chemist, the botanical student, and the curious observer of nature. While the evil consequences of undue or irregular indulgences have been carefully depicted and illustrated by appropriate anecdotes, strict regard has been paid to their connexion with revealed religion, and the laws that ought to regulate society, whether in the Pagan, Mahometan, Jewish, or Christian world. The efforts of Temperance Societies to prevent the progress of immorality, arising from the frequent and excessive use of intoxicating liquors, have been incidentally noticed, and although the detail may appear to some irrelevant, it cannot fail to prove acceptable to every person who has the well-being of his fellow-creatures at heart. Reference has also been made to the policy adopted in various countries of deriving a revenue from intoxicating liquors, the means employed in raising that revenue are explained, while their effects, as regards the community at large, are freely discussed.

On perusal of the Book, the learned reader will perceive the difficulties, which the Author has had to encounter in collecting materials for so novel a publication. Every quarter of the globe, it may be said, has been laid under contribution to aid the undertaking; and the patient labours of scientific research have been pursued with indefatigable activity (during the scanty leisure afforded by arduous official business), to render as complete and comprehensive as possible a subject, which, in

the collection and arrangement of the materials, might have wearied or discouraged more enterprising writers. Having, however, brought the matter to a close, he trusts the public will do him the justice to believe that utility rather than pecuniary interest was the chief object of his researches, since the volume has far exceeded the bounds originally intended ; and, should he prove so fortunate as to meet the approbation of the learned and curious, he will feel, in a great measure, repaid for the many difficulties he has had to encounter in the composition of a work, by which he has beguiled many a tedious hour, and sweetened many a solitary evening.

It may be well to observe, that the desire to compress the matter within the limits of a single volume, prevented the insertion of some practical calculations and observations connected with brewing and distilling, which will, however, be brought forward at a future period, should the success of the present work warrant it.

8, Peter Place, Dublin,
May, 1838.

CONTENTS.

	Page
Early cultivation of the grape	1
Use of wine among the Hebrews	5
– – the Egyptians	7–50
– – the Greeks and Romans	8
Disquisition on the reputed knowledge of the Arabs and Saracens in the practice of distillation	23
Prohibition of wine, and anecdotes respecting its use, among the Mahometans	33
Liquors used by the Syrians	45
– – the Nubians	55
– – the Abyssinians	58
– – other African nations	63
the Persians	82
Observations on Opium and other exhilarating substances	96
Liquors used by the Tartars	136
– – the people of India	151
– – Thibet	170
– – Bootan	173
– – the Birman empire	174
– – Siam	176
– – Nicobar Islands	180
– – Ceylon	*ibid*
– – Madagascar	187
– – Sumatra	191
– – Java	192
– – Phillippine Islands	200
– – Cochin-China and Tonquin	202
– – China	208
– – Japan	238
– – Loo-Choo Islands	246
– – Polynesian Islands	250
– – Australasia, embracing New Zealand and New	
– – South Wales, &c. &c.	258
– – Eastern Africa	268
– – Cape of Good Hope	270
– – St. Helena	281
– – West Indian Islands	289
– – Mexico and Peru	292
– – Chili	307
– – Paraguay	311
– – Brazil	312
– – the Floridas	320

			Page
Liquors used of the		United States	325
—	—	Canada	341
—	—	the Indian tribes	349
—	—	Canary Isles	357
—	—	Madeira	358
—	—	Spain	361
—	—	Portugal	376
—	—	France	381
—	—	Italy	403
—	—	Isles of the Mediterranean	408
—	—	Ionian Islands	409
—	—	Cyprus	411
—	—	Hungary	424
		Provinces bordering on the Rhine	430
—	—	Germany	435
—	—	Switzerland	449
—	—	Holland	451
—	—	Hanover	458
—	—	Prussia	460
—	—	Poland	466
—	—	Denmark	469
—	—	Iceland	471
—	—	Norway	472
—	—	Sweden	475
—	—	Lapland and Finland	483
—	—	Russia	487
—	—	Crimea	498
—	—	Georgia	503
—	—	Circassia	506
—	—	Siberia	509
—	—	Kamtschatka	511
—	—	England	522
—	—	Scotland	569
—	—	Ireland	583
Addenda			716
Index			733

ERRATA.

Page 52, line 27, for *mines*, read wines.
... 307, ... 10, for *vine*, read wine.
... 534, ... 2, for *import*, read impost.
... 541, ... 3, for *Whitehead*, read Whitbread.
... 560, ... 6, for *progress*, read produce.
... 632, ... 31, for 5,675, read 56.76.
... 648, ... 34, for *chargers*, read charges.
... — ... 36, for *charger*, read charge.
... 663, ... 40, for *rage*, read range.
... 689, ... 14, for *look* read lock.

THE

INVENTIONS AND CUSTOMS

OF THE

ANCIENTS AND MODERNS

IN THE

USE AND MANUFACTURE

OF

INEBRIATING LIQUORS.

When man was driven from that peaceful asylum originally assigned to him by his Creator, and condemned to earn his bread by the labour of his hands,* his attention was, no doubt, powerfully exerted in procuring the necessaries of life; such as food, clothing, and habitation. As a cultivator of the earth, he must have been constantly employed, and, as his occupation varied with the varying seasons, his mind was continually exercised in contrivances to diminish and sweeten his toil. His activity, when thus excited, soon extended its influence to every department of life, and having procured its necessaries, he was no doubt early led to the exercise of his ingenuity in the attainment of its luxuries. Among these, the preservation of fruit and their juices, however rudely practised, might have led to the use of inebriating drink; a beverage which, as will hereafter be shewn, has been discovered by some of the most savage nations, and deemed a luxury by the almost universal testimony of mankind.

Whether the use or knowledge of fermenting the grape was known before the flood, is now uncertain. We are informed, that a city was

* Genesis iii. 23.

built by Cain, which was named Enoch, after his son,* and that Jubal, one of his early descendants, invented the harp and organ, while another, Tubal Cain, was an instructor of every artificer in brass and iron. From this it is evident, that the working of metals and the construction of various sorts of implements had, at this early period of the world, arrived at a considerable degree of perfection: and it has been conjectured, with great probability, that as Adam and Cain were "tillers of the ground," they could not have cultivated it without instruments of husbandry made from metals, hence the plausibility of the conclusion, that God in his goodness gave to our first parent the principles of every branch of knowledge suited to his condition and that of his posterity.—There is nothing however to guide us, even at this advanced state of the arts, in the supposition that mankind had then any knowledge of inebriating liquors. At what period therefore, and in what manner, wine was first made and used, is now unknown. Noah, it appears from Genesis ix. 21, became drunk with the produce of his own vineyard; and, as it is reasonable to suppose, he was well acquainted with all the discoveries of his progenitors, and their different methods of cultivating the ground, we may infer from this circumstance, that the cultivation of the vine was practised in the antediluvian world, and the intoxicating quality of the grape fully experienced. In the 20th verse of the chapter of Genesis, above quoted, it is said, "Noah *began to be* a husbandman, and he planted a vineyard," from which it is not to be inferred that this was the first time he had done so, or that he was the first husbandman. As the words *to be* are not in the original, the learned Doctor Kennicott says that the translation ought to be, "Noah *continued* to be a husbandman," implying that this was a recommencement of an occupation which had only been interrupted by the flood. Whether, however, the drink, which had the effect of intoxicating him, was the simple expressed juice of the grape, or had undergone any fermenting process, we are not told. It is admitted that the mere juice of the grape has no inebriating quality; and that to produce intoxication it must undergo a certain degree of fermentation; but as the ripe juice possesses in itself all the principles essential to such a change, it would very soon ferment, particularly in warm climates, so that the period would be but short between its mild and intoxicating state. The juice of the grape, which is usually called *must*, is known to ferment of itself at a heat of about 70°, and hence wine must have been early known, particularly in hot climates where drink is so much required to allay

* Genesis iv. 17.

thirst, a further proof that the vinous fermentation was familiar long anterior to the deluge. Carrying this idea still farther towards the creation, Milton seems to have entertained the opinion, that the fruit of which our first parents had eaten,

> ——— " Whose mortal taste
> Brought death into the world, and all our woe,"

was of an intoxicating nature, when he says,

> " Soon as the force of that fallacious fruit
> That with exhilarating vapour bland
> About their spirits had played, and inmost powers
> Made err, was now exhaled." ———

The Rabbins, or Jewish doctors, were of the same belief; the vine being considered by them as the tree so strictly prohibited by the Almighty. Doctor Lightfoot and many eminent theologians were impressed with the like opinion;* but all conjectures on this subject, however respectably supported, are unsatisfactory, obscured as it is by the lapse of ages and the silence of the grave. It is worthy of remark, that these opinions of the learned are in coincidence with the oral tradition of different nations. In the island of Madagascar, the prevailing notion of the natives is a striking illustration. They believe that the four rivers of paradise consisted of milk, wine, honey, and oil; and that Adam, who required no sustenance, having drunk of the *wine* and tasted of the fruits, contrary to the command of God, was driven from the garden, and subjected to the punishments which were thus entailed upon him and his posterity.

Noah, it must be admitted, is certainly the first on record who planted a vineyard, and experienced the inebriating quality of the grape. The honour of this discovery the pagans afterwards attributed to Bacchus, whom they worshipped as the sensual encourager of feast and jollity; hence Noah or Bacchus was denominated *zeuth*, which by the Greeks was rendered *zeus*, signifying ferment.—That Noah seems to be aimed at by most nations, as the primitive inventor of wine and the real original Bacchus, has been advocated by many learned men. Bochart maintains that Cadmus first brought the worship of Bacchus among the Grecians, and that the vine was introduced to them by the Tyrians. He also thinks that Noah was the same as the Saturn of the pagans, and Plutarch attributes the discovery of the vine to that heathen deity; hence all the reasonings of the ancients,

* Vide " Hebrew and Talmudical Exercitations upon St. Luke."

on this subject, seemed to indicate the Promised Land as the native country of the vine; and even the Greeks themselves, in their mythology, place the inventors of wine as inhabitants of Syria and the adjacent countries.—At the present day, a spot near mount Ararat is still shewn as the place where Noah is said to have planted the first vine; and the wine, yet manufactured there, is of superior excellence.* It is therefore more than probable that Assyria was the native region of the vine, and there is no stretch of fancy in conceiving how it made its way into other countries. If, as some conjecture, in relation to what is stated in Matthew xxiv. 38, that an indulgence in inebriety formed a large portion of those vices, for which God destroyed the world by a deluge, it is a singular coincidence that the same crime was the first instance of human weakness, after the infliction of that punishment; and that God, through the spirit of prophecy given to Noah, should pronounce a curse on those who treated the indiscretion with levity. "Cursed be Canaan," said Noah; "a servant of servants shall he be unto his brethren;" an anathema which to this day rests on his posterity. The devoted nations which God destroyed, before Israel, were the descendants of Canaan, as were also the Phœnicians and Carthaginians, finally subjected and annihilated by the Greeks and Romans. Ham, the meaning of which is *burnt*, or *black*, was the father of Canaan, and the Africans, who are said to be his offspring, bear evident marks of God's displeasure, since they are scarcely treated as human beings, but bought and sold like beasts of burden. The Mahometan negroes have a tradition, that as Japhet was the most active in covering the nakedness of his father, which Ham discovered, their subjection to Europeans, the descendants of Japhet, is the consequence of the indiscretion of Ham.

In following the course of Scripture narrative, it appears that, as the descendants of Noah increased, the vine, as supplying the means of a more comfortable subsistence, was cultivated to considerable extent, and that persons were purposely set apart for the manufacture of wine, as presses were erected and the juice squeezed from the grape, as soon as the fruit was ripe. Palestine, it is said, early abounded in excellent vineyards. So great was their number, that of the single inheritance belonging to the tribe of Judah alone, in order to denote the superabundant produce, it was metaphorically said, that he washed his garments in wine, and his clothes in the blood of the grape; and in 2 Kings xviii. 32, the land of Canaan is said to be a land of wine and vineyards, and of the oil of the olive. So many and so various

* Kotzebue's Narrative of a Journey through Persia, p. 94–7.

are the notices of the prophets respecting wine, that it would be tedious and unnecessary to quote them. Two kinds of wine are particularly mentioned as of an excellent and superior description; namely, the wine of Eldon and that of Lebanon. The wine of Eldon became an article of traffic, and was transported to Tyre and to more distant places, where, with a variety of other valuable merchandize described by Ezekiel, and evincing the advanced state of the arts at the time, it was eagerly purchased. This wine was said to be well known to the ancients, and, under the name of Chalibonian wine, was noted for its peculiar excellence. It was made at Damascus, where the Persians planted vineyards in order to obtain it in greater perfection and in larger quantities. Its quality is said to have been that of a luxurious and generous wine. The wine of Lebanon is described as sweet scented, and said to have been much admired; its excellence was ascribed to the great richness of the vines which grew on the sides of Mount Lebanon, where they had a good aspect or favourable exposure to the sun.—The wines of Ascalon, Gaza, and Sarepta were held in high estimation in distant countries.

From the testimony of ancient writers, we find that it early became the practice to mix certain perfumes or sweet-scented herbs in the wine to improve its flavour. With these odoriferous wines the Hebrews are said to have been well acquainted. Of the composition of these, and the preparation of the different ingredients, we are not informed; there can, however, be but little doubt that by means of these mixtures there would be a much greater variety of wines formerly than at present. Having but one kind of liquor, they would no doubt modify and improve it as much as possible; accordingly, we find particular mention made of vinegar wine, medicated wine, spiced wine, and wine mixed with perfumes; but what particular kinds or variety of spicery or perfumes were infused, can only be conjectured.

The Scriptures also inform us, that strong drink was administered to criminals before execution, with a view to render them less sensible of pain; and the Talmud says, that it consisted of a cup of wine mingled with frankincense, the latter rendering the draught more sacred on account of being used at the sacrifices. This bitter and intoxicating cup was usually prepared by women in Jerusalem, through compassionate motives, in order to inspire unfortunate culprits in their last moments with false courage, and to enable them to meet their fate with fortitude. Pennant, in his History of London, relates, that a similar practice formerly prevailed in England, it being customary to present a great bowl of ale to malefactors, on their way to the place of execution, as the last refreshment they were

to receive in this life. The same ceremony is still kept up at Hamburgh by a religious society of females, called the Blue Sisters. In the case of a capital condemnation, the culprit, who is obliged to pass their convent, while going to the fatal spot, is presented by those pious ladies with a glass of white wine, which, when he has drank, is dashed on the ground by the executioner, that no one may use it ever after; and also to signify regret on the occasion which brought the unhappy mortal to drink of the accursed beverage.* The foundation of this custom may have been laid in the injunction of Solomon, as delivered in Proverbs xxxi. 6, "Give strong drink to him that is ready to perish, and wine to those that be of heavy heart." In Jeremiah xxv. 16, allusion seems to be made to this practice where the prophet foretels the destruction of Babylon in these words: "And they shall drink, and be moved, and be mad, because of the sword that I will send among them,"—perhaps of a similar nature, was the bowl of wine, called *nepenthe*, which, Homer tells us, Helen presented to the guests of Menelaus, when oppressed with grief, to raise their spirits and banish care. The composition of this, it is said, she had learned from the Egyptians, and is thus beautifully described by the poet:—

> "Meanwhile, with genial joy to warm the soul,
> Bright Helen mixed a mirth-inspiring bowl;
> Tempered with drugs of sovereign use t' assuage
> The boiling bosom of tumultuous rage;
> Charm'd with that virtuous draught the exalted mind
> All sense of woe delivers to the wind."

The practice, so prevalent among the Hebrews of mixing their wine with a portion of drugs or bitter herbs, was always with a view to make it stronger and more inebriating, by the addition of more powerful ingredients. The prophets have, in numerous instances, reprobated this practice; but, the Jews, like the tipplers of modern days, appreciated the pleasures of the bottle by the strength of its contents. In Habakkuk ii. 15, it is written, "woe to him who maketh his neighbour drunk, who putteth his flaggon to him and maketh him drunken." In this the prophet is supposed to allude to the conduct of Pharaoh towards king Zedekiah, who made him drunk that he might insult over his weakness. The Rabbins relate that one day Nebuchadnezzar, at an entertainment, sent for Zedekiah, and gave him an intoxicating liquor to drink, purposely to expose him to ridicule.

* Wilson's Trav. in Russia, &c. vol. i. p. 23.—Neal's Trav. in Germany, &c. p. 25.

Some have asserted that the *strong drink*, so often mentioned in Scripture, means palm or date wine. Theodoret and Chrysostom were of this opinion, and being both Syrians, their authority is unquestionable. Judea, it is well known, was noted for the abundance and excellence of its palm-trees, of which Fleury, in his Manners and Customs of the Ancient Israelites, says those about Jericho yielded a considerable profit;* and Pliny calls this region "*palmitibus inclyta*," *renowned for palms*. Jericho was styled the city of palms, by way of eminence; and Palmyra, said to have been built by Solomon, received its name from the same cause. That the Jews were acquainted with the making of palm wine, there is little reason to doubt; but whether it was of a stronger body than that made from the grape we are not informed, as we have seen that the latter underwent many changes by infusions and mixtures.

The wine mentioned in Exodus xxix. 40, and Numbers xxviii. 7, as "a drink offering," is considered to have been made from the date or fruit of the palm tree, the juice of which, from containing a great quantity of saccharine matter, being as Doctor Shaw expresses it, of a more luscious sweetness than honey, could not fail of producing drink of a very inebriating quality. In Hebrew it is called *Siker*: the word *shecer* from *shakar*, to inebriate, signifies in that language any kind of fermented liquors, or strong drink. "Any intoxicating liquor," says St. Jerome, "is called *sikera*, from the Greek word σικερα, whether made of corn, apples, honey, dates or any other fruits.† One of the four prohibited liquors among the Mahometans in India, is called *sakar*, which signifies inebriating drink in general, but especially date wine. From the original word, Doctor Adam Clarke observes, we have probably borrowed our term *cider*, which among us exclusively implies the fermented juice of apples.—Thus, from a review of the sacred writers, it does not appear that the people in their day had any knowledge of the art of extracting spirit by evaporation. Had that discovery been known, it is likely they would have noticed it, as well as the other arts of which they have given us an account.—Indeed, the free use of wine, which was then generally practised, may be said to have prevented a search after any other kind of liquor; for it is only in those places where the vine is not cultivated that the first notice of any other beverage is found.

Among the Egyptians, whose country was famous for its corn, Herodotus tells us, that beer, or a wine drawn from barley, was the

* Clarke's Edition, London, 1821, p. 39.

† Epist. ad Nepotianum de Vita Clericorum; et in Isai. xxvii. 1.

liquor principally used;* he describes the clergy as feasting on the sacrifices and quaffing the sacred wine; and relates that in the time of Cambyses, 529 years before the Christian era, the Syrians were well skilled in the manufacture of palm wine; and that among the presents sent by that monarch to the Ethiopians was a vessel full of that liquor. The same writer informs us, that the Lotophagi, a people of Africa, who chiefly subsisted on the produce of the lotos plant, made a species of wine from its berries. According to Scylax, the geographer, who flourished before Christ 522 years, the lotos served these people both for meat and drink, and from that circumstance they derived their name. Strabo says, they were not sensible of the want of water in the burning and sandy region they inhabited, as the root, stalks, &c. of the lotos, supplied them with rich liquor, as well as delicious food. Ulysses and his companions are said to have been enchanted with it, as it made those who eat of it forget their country and relations.

———— we touched, by various errors toss'd,
The land of Lotos, and the flowery coast.
We climb'd the beach, and springs of water found,
Then spread our hasty banquet on the ground.
Three men were sent, deputed from the crew,
(An herald one) the dubious coast to view,
And learn what habitants possessed the place.
They went and found a hospitable race,
Not prone to ill, nor strange to foreign guest,
They eat, they drink, and nature gives the feast;
The trees around them all their food produce,
Lotos the name, divine, nectareous juice!
(Thence called lotophagi) which whoso tastes
Insatiate riots in the sweet repasts,
Nor other home, nor other care intends,
But quits his house, his country and his friends.†

Of the lotos there are various species; that, referred to by Herodotus, is said to be the Egyptian lotos, a sort of lily, growing on the banks of the Nile. The inhabitants make bread of the seed, and eat the root, which has much the size and appearance of an apple or potato. Savary saw the people, who live on the borders of the Menzel lake, feed on it. Another description of the lotos is highly esteemed in China, where it is called Lien-hoa; it anciently formed a portion of the materials used in making the liquor of immortality, a drink mentioned in a subsequent part of this

* Herodotus, book ii. s. 77.

† Vide Odyssey, l. ix. v. 95.

work. As it is uncertain from what species of the lotos, wine was made, it is probable that it was from the lotos or Nebek tree, mentioned by Burckhardt, which he found in great plenty in Arabia.* This fruit ripens in March, when it becomes a prime article of food, nutritive in the highest degree, and capable of being made into wine, or distilled into a strong liquor.

Xenophon relates, in his history of the retreat of the ten thousand Greeks, after the battle of Cunaxa, that in that part of Armenia next to Curdistan, the inhabitants had a method of preparing a potent liquor from what appears to have been barley. "The soil," says he, "is good for arable and pasture, and the produce abundant; yet the people inhabit caves with their cattle, poultry, &c.—they fill open vessels with barley and water up to the brim." The time for the fermentation and other parts of the process is not told, but the liquor is described as very strong, if not mixed with water, and pleasant to those who are accustomed to it. Beside the vessels in which it was kept, lay hollow canes or reeds of various sizes, through which the people drank by suction; but, in token of hospitality, they allowed their Grecian guests to drink out of the vessels, "after the manner of oxen."† Notwithstanding this drink made from grain, there was abundance of palm wine, as well as vinegar, found by the Greeks in the villages, during this memorable retreat; and so numerous were the palm trees, that they were cut down to construct bridges over the canals and ditches which they had to pass;‡ probably the liquor made from barley was the same as that called zythem, made in some of the provinces of Asia Minor, mentioned by Diodorus Siculus upwards of 800 years afterwards. Dioscorides, as also Galen, describes the ale of their time as affecting the nervous system powerfully, and the head in particular, with very painful effect, so that it has been conjectured that the ale alluded to, was not only the produce of bad fermentation, but unpreserved by any antiseptic aroma like the hop.

The invention of these beverages is attributed to Isis, or to Osiris, who are said to have reigned jointly in Egypt, and are deified in ancient mythology. Some writers maintain that Osiris is the same as Misraim, the son of Cham, to whom the invention of ale is solely ascribable; but to whom these luxuries owe their origin, it would now be impossible to determine. The Egyptians and Hebrews, as we find from Moses, who was versed in all their learning,§ understood

* Burckhardt's Travels in Arabia, vol. ii. p. 252.

† Xen. Anab. p. 332. ‡ Ibid. b. II. § Acts vii. 22.

the art of dyeing, smelting, and working in metals, architecture, sculpture, and engraving on precious stones, besides the preservation of the dead by antiseptic substances. These, with many other inventions, were communicated to the Egyptians by the Hebrews long before they were known in Greece. Though the making of glass of various colours may be added, as a discovery known to the Egyptians, from a very remote antiquity, as well as the art of rendering gold potable, as appears from Exodus xxxii. 20; yet we no where read that they ever attained a higher knowledge in the secrets of chemistry.

In the practice of the medical art, the most ancient physicians appear ignorant of the mode of extracting any of the essential oils by steam or vapours. Hippocrates, justly called the father of physic, who flourished between the 80th and 88th Olympiad, or about 400 years before Christ, is the oldest author, whose writings, expressly on the medical art, are preserved; and in the whole of his works, there is not a single expression which could warrant the idea of a retort or alembic, having ever been used by him.

Some have maintained, from a passage in the Gospel of St. Matthew vi. 30, that the use of the still was partially known in our Lord's time, as they intimate that he alluded to the distillation of herbs for medicinal purposes, when he used the word κλιβανον, (klibanon) where he said, speaking of the grass of the field, which to-day is, and to-morrow is cast into the oven, "*eis ton klibanon*," "into the oven"—"into the still," according to others. But, as there does not appear a vestige of evidence in any ancient author, or writer on the Scriptures, that the art of distillation was then known, such a translation may be said to have more of fancy than learning in it. Pliny the elder, who was nearly contemporary with our Saviour, and who, in his natural history, has shewn himself so curious and so judicious a master in the compilation of facts and observations, appears to be altogether ignorant of any stronger liquor, than that produced by fermentation. He noticed the various drinks of the Egyptians, in use in his day, which were manufactured from grain steeped in water; and assures us, that they were very strong, and drunk without any mixture whatever. These beverages were distinguished by various names, such as zythum, cœlia, ceria, Ceris vinum, or wine of Ceres, curmi, cervisia, &c. each literally meaning ale, or beer. The making of them, he says, was known to the several nations, who inhabited the west of Europe. The mode of manufacture, however, was somewhat different in different countries; but the nature and properties of the liquor were everywhere the same. The people of Spain, in particular, he informs us,

had arrived to such perfection in the art, that the drink made by them could be kept to a very great age.* Some think that Pliny meant distillation, when, after the enumeration of those beverages, he tells us, "that water was made to intoxicate," and because he alludes to it as an extraordinary invention. This intoxicating water would certainly appear to be very different from that obtained by the ordinary mode of fermentation, if the passage be read as unconnected with the preceding observations; but as this cannot be done with propriety, it means nothing more than the intoxicating power or strength acquired by the water in the fermenting process of the grain. "Heu mira vitiorum solertia! inventum est quemadmodum aqua quoque inebriaret."—"Oh, wondrous craft of the vices! by some mode or other, it was discovered that water also might be made to inebriate." This passage led Mr. Murphy, in a note in his translation of Tacitus, to make Pliny speak as if the Egyptians had their intoxicating liquors *distilled* from grain; an error into which he, in common with many other respectable writers, has fallen.† In the 33d book, chap. 8, he describes the mode of obtaining an artificial quicksilver by distillation. The apparatus employed was two earthen pots and an iron pan; but he does not, in any other part of his work, describe the application of a like apparatus to the extracting of the juices of vegetable matter, if we except his account of the manner in which oil was obtained from pitch, in book xv, chap. 7, where he says, "the vapour arising from the boiling pitch was collected on fleeces of wool spread over the pots, and afterwards extracted from them by expression." This was evidently distillation in its infancy, clearly proving that it was not known in his time, in a more improved state.

Pliny, in treating of the wine of his own country, details, with wonderful minuteness, the progress of its manufacture, and the perfection to which it had then arrived. It was not, however, until about 600 years after the foundation of the Roman empire, that vines were cultivated, and that wine came into general use. Before that period wines were so scarce, that, in the sacrifices, the libations to the gods were ordered to be made only with milk.‡ Numa, the successor of Romulus, who enacted this observance, directed, from the great scarcity of wine that prevailed, that no man should besprinkle the funeral pile with it, and when the sacrifices to the gods were permitted in wine, it was decreed, with a view to encourage the plantation of vineyards, that all wine so offered should be the produce of such vine plants as had been cut and pruned.

* Pliny, book xiv. chap. 22. † De Morib. German. vol. iv. p. 268.

‡ Pliny, b. xiv. chap. 12.

It was in these times of simplicity that women were forbidden to drink wine; and for that reason their near relations were permitted to salute them when they came to their houses, in order to smell whether they had tasted any *Temetum*, for so they termed wine, which if discovered, gave their husbands a right to punish them. According to Dionysius of Halicarnassus, Romulus was the author of the law which permitted a husband to kill his wife for drinking wine, as well as for the crime of adultery. It is related that Ignatius Mecennius, having killed his wife with a cudgel, because he found her drinking wine out of a cask, was acquitted of the murder by Romulus.* Fabius Pictor, in his annals, says that a Roman lady was starved to death by her own relations for having picked the lock of a chest in which were the keys of the wine cellar.† We are assured by Pliny, that Cneius Domitius, a judge in Rome, in the like case pronounced sentence judicially against a woman who was defendant, in this form, "that it seemed she had drunk more wine without her husband's knowledge than was needful for the preservation of her health, and therefore that she should lose the benefit of her dowry.

We read that Lucius Papyrius, general of the Roman armies, when at the point of engaging the Samnites, made no other vow than that he would offer to Jupiter a little cup or goblet of wine, in case he gained the victory. Men in those days were also forbidden to drink it, till the age of thirty.

Towards the decline of the Roman commonwealth, and under the first emperors, the women were not only accustomed to drink wine, but carried the excess of it as far as the men, which, if we credit Pliny, exceeded any thing of the kind in modern times. To prevent females from committing excessive crimes, the lawgivers in ancient times prohibited the free use of wine. Seneca complains bitterly that, in his day, the custom of prohibition was almost universally violated. The weak and delicate complexion of the women, says he, is not changed, but their manners are changed and no longer the same. They value themselves upon carrying excess of wine to as great a height as the most robust men; like them they pass whole nights at table, and with a full glass of unmixed wine in their hands, they glory in vieing with them; and if they can, in overcoming them. Theophrastus says that great drunkards, when they drank for a wager, used to take the powder of pumice stone before setting to.‡ This probably gave rise to the invention of "*devils*," those choice and whetting *tit bits*, so much resorted to after dinner by the topers of the present day. Some of the Romans even went so far as to take hemlock in

* Pliny, book xiv. chap. 13. † Ibid. ‡ Pliny, b. xxxvi. chap. 21.

order to make them drink. Tiberius Claudius, who was fond of a goblet himself, knighted Novellius Torquatus, by the title of Tricongius, or the three-gallon knight, for drinking, at one draught, three congii of wine, equal to nine quarts, three three-eighth pints, English wine measure, without taking breath.

It was generally believed at Rome, that Caius Piso owed his advancement at the court of Tiberius to his extraordinary powers in that way, as it is said he would sit for two days and two nights drinking without intermission, or even stirring from the table. Tergilla, who challenged Marcus Cicero, son of the famous orator, to a drinking-bout, boasted that he usually drank two gallons at a draught. In later times we read, that the emperor Maximin, who was no less remarkable for his gigantic stature, than for his great strength, would drink six gallons of wine without getting drunk. Maximin is said to have been eight and a half feet high, made in proportion; and if, agreeably to the old adage, "good eating requires good drinking," we need not be surprised at his powers in that way, when it is asserted, that he ate forty pounds of flesh every day. Sinclair, in his code of health, tells us that a Mr. Vanhorn, of modern notoriety, drank in the course of three and twenty years, 35,688 bottles, or 59 pipes of red port—a quantity, perhaps, not exceeded by any of the drunkards of antiquity. What a prodigious stomach and constitution this man must have had!

Pliny exhibits a strong proof of the great fondness which the Romans, as well as other nations, had for this liquor, in stating that not less than 195 sorts were in general use; but of the wines most esteemed, he reduces the number to eighty, two-thirds of which he reckons the produce of Italy. Those wines which took their name from Opimius, in whose consulate they were made, some of which were preserved to Pliny's time, that is, nearly 200 years, were not, from their great excellence, to be purchased for money. If a small quantity of any of them were mixed with others, it is said they communicated a surprising strength and flavour. The empress Julia Augusta often said, that she was indebted to the goodness of the Pucine wine for living to the age of eighty-two. This wine was the produce of the grape planted along the Adriatic sea, or gulf of Venice, upon a steep and rugged hill, not far from the source of the river Timavus, and was thought to have received some of its valuable qualities from the vapours of the sea, but more from the nature of the soil and the favorable situation of the vineyards. The wine Cœcuban manufactured from the grape of the poplar marshes of Amyclæ, was much sought after before the time of Augustus Cæsar; but from the preference given to Setine, a wine produced in the

vineyards above the forum Appii, Cœcuban fell into disrepute, and Setine was preferred for its various medicinal virtues. Amongst all the wines of Italy, the Falernian, so much celebrated by Horace, was in the greatest repute, and by Martial pronounced *immortal*, and justly so, when we consider that its praises have been sung by immortal bards. It was so very strong and rough, that Horace called it a fiery wine, and it was not drank till it had been kept ten years. Galen says it was in its best condition between the tenth and twentieth. To correct its roughness, it was either mixed with honey or wine of a weaker nature, by which it was rendered delicious—sometimes it was diluted with water to moderate its strength. Falernian may be said to have been amongst the ancients what Tokay is amongst the moderns. The Faustian wine, a species of the Falernian, was of so spirituous a nature, that it would burn with a pure and light flame. The Alban, or wines of Alba, made near the City of Rome, are ranked by Pliny as only a third rate wine, but praised by both Horace and Juvenal—when new it was luscious and of a thick consistency; and in about fifteen years considered in its best state. The Surrentine wines, the produce of Aminean grapes, said by Tiberius Cæsar to be so much recommended by physicians, were, from their acidity, called by him *generous vinegar*—but those wines were liked by Caligula. The Massic is a wine described by Martial. The Fundanian, or wine of Signia, was so rough and astringent as to be mostly used for medicine. The Mamertine was a light wine from about Messina in Sicily, and that which was ordered by Julius Cæsar to be used in the feasts of the city; and the Potulane wines were so called, from the first planters of the vine from which they were produced. The wines of Tuscany, the Prætutian, the Ancona, the Palmesian, from the vines growing up the palm or date tree; Cesenation and Mecænatian wines; the Rhætian, within the territory of Verona, spoken of by Virgil, and ranked by him next to Falernian; the Lateniensian, the Graviscan, and Statonian wines; the wines made between the Pyrenean hills and the Alps, were with various others, celebrated, and many of them in great demand in Pliny's day. From the foregoing particulars, it may be inferred, that the abundance of wines amongst the Romans, rendered every other description of intoxicating drink unnecessary; and that the distillation of spirituous liquors was wholly unknown to them. Neither the ruins of Herculaneum nor Pompeii, afford any vestige of the knowledge of such an art, while the Amphoræ, which held the wine, are yet found in the cellars of several of the houses, after a lapse of nearly two thousand years.

Among the Greeks, wine was also the favourite beverage. Homer mentions a very famous wine of Maronea in Thrace, supposed to be the same as that carried by Ulysses when he visited the Cyclops; this wine, much celebrated by Pliny, was so strong as to bear mixing with twenty times its quantity of water; but it was common for the natives to drink it unmixed. The wines of Cyprus, Lesbos, (now Mytelene) and Chios, were much celebrated. Those of Lesbos, Chios, and Thasos have respectively claimed superiority. Corcyra, Crete, Cnidus, and Rhodes, yielded wines of the richest body, and most delicate flavour, with which a great portion of Europe was supplied. Those of Cyprus, as well as the wines of many other Greek islands, are, as will be noticed hereafter, in great esteem to this day. Horace often mentions the wines of Lesbos, and represents them as very wholesome and agreeable; they were said to have been less odorous than some other wines, but having so delicious a flavour as to deserve the name of ambrosia rather than wine; and when old, were denominated nectar, from their comparative excellence. Notwithstanding this character of the Lesbian wines, Pliny ranks them inferior to Chios or Thasos; and Strabo reckons the Chian the best of Greek wines, while Virgil calls the Phanæan, *the king of all wines:* so much did the wines of Chios surpass those of every other country, that the inhabitants of that island are thought to be the first who planted the vine, and taught the use of it to other nations.* The desert wines among the Greeks were the Thasian and Lesbian, and when the Romans became acquainted with the excellence of the Greek wines, the Chian and Lesbian were their favourite desert wines. Virgil praises the Argitis, a white wine, as capable of being preserved for an extraordinary length of years; besides which, we read of lighter kinds of wines, such as those of Naxos; the Mendean, a Thracian wine, and the Omphacites, procured from Lesbos and Thasos. The frequent mention of wine, the praises bestowed on it, the flowing goblets, and luxurious banquets, as described by Homer 1000 years before the Christian era, shew its value and the attachment of that great poet to the comforts of the table and to jovial society. Horace was of this opinion when he says,

> Homer, in praise of the profuse,
> No doubt loved well the balmy juice.†

All the wines already enumerated were in such esteem at Rome, according to Marcus Varro, quoted by Pliny, that in the year 675

* Rollin. † Horace, Epist. 19. b. i.

after the foundation of that city, Publius Lucinius Crassus and Lucius Julius Cæsar, the then censors, published an edict, and proclaimed, "that no man should sell any Greek wine or Arminean, but after eight *asses* the amphora," or about a penny a gallon.* Thus it would appear that a duty was levied on wine amongst the Romans; and this is confirmed by Cicero, in his defence of M. Fonteius, as well as by other historical records still extant. The Rhodian wine was frequently used by the Romans in their libations, as is evident from Virgil—

> The Rhodian, sacred to the solemn day,
> In second services is poured to Jove,
> And best accepted by the gods above.†

From the great price and estimation of Chios wine, no person was indulged with more than one draught of it at a meal; a proof of this is given by Varro in the instance of Lucius Lucullus, who, when a boy, never saw more than a cup served up at his father's table after dinner. After the return of this same Lucullus from Asia, in an entertainment, which he gave to the citizens of Rome, he distributed among the people more than 100,000 gallons of wine.‡ Of Caius Sentius, the prætor, it is said that he never used Chian wine on account of its dearness, but because it was prescribed to him by the physicians as useful for the *cardiaca passio*, or palpitation of the heart, to which he was subject; on the contrary, such was the love of Hortensius, the famous orator, for it, that when he died, he left to his heir about 10,000 barrels, which had been stored in his cellar. The prevailing quality of this, as well as of the other wines already mentioned, was sweetness with delicacy of flavour.

Among the Greeks, it appears, sweet and odoriferous wines were always in great estimation. In many instances, when the wine was deficient in saccharine matter, they sweetened it by putting flour kneaded with honey into the vessels. This practice, is said, to have been first introduced by Aristæus, and was then denominated *oinomeli*, honied wine. Origanum, aromatics, fruits, and flowers, were also infused. The wine of Byblos, in Phœnicia, was much esteemed for the strength of the perfumes with which it was impregnated. But of all the mixtures and infusions, which were common among them, that of pouring salt-water into wine was the most singular. It was done, it would seem, with a view to promote digestion and prevent the wine from flying to the head. One measure of sea-water was considered

* The amphora contained something less than 26 quarts.

† Dryden's Virgil, Georg. ii. ‡ Pliny, b. xiv. chap. 14.

sufficient for fifty of wine.* This mixture, which was called Biæon, was accidentally discovered by a servant in Greece, who, to deceive his master, poured sea-water into a vessel out of which he had stolen and drank some wine; and it was thought to have improved the flavour of the liquor. In Rhodes and Cos, a considerable quantity of this wine was made, which the Romans and others imitated; and in modern Greece, salt-water is used in the preparation of wine, on the grounds that where the Saccharine principle is superabundant in the must, the sea water assists fermentation, and improves the strength and flavour of the produce.

If we credit some authors, wine was not the only beverage known to the Greeks; for, although Homer is silent on the matter, they knew, from a remote period, how to compose, with water and barley, a liquor, which, for strength and goodness, approached near to wine.† Ovid, speaking of the meeting that Ceres, exhausted with weariness, had with an old woman, named Baubo, says, that the goddess, having demanded some water, the old woman presented her with a liquor manufactured from dried grain. Thus expressed in the translation:

> "The goddess knocking at the little door,
> 'Twas open'd by a woman old and poor,
> Who, when she begg'd for water, gave her ale,
> Brewed long, but well preserved from being stale."‡

This was their *oinos kristhinos cerevisia*, or wine made from barley. They also understood the making of palm wine, called *oinos epsetos*, sometimes termed *oxos epseton*, for oxos was a general name for all made wines.§ The ease, however, with which the juice of the vine was obtained, rendered the use of these wines less common, and almost unnecessary.

The method of making wine among the Greeks was nearly as follows:—About the end of September, or early in October, when the fruit was deemed sufficiently ripe, the grapes were collected, and usually exposed for ten days to the sun and the coolness of the night, in order that they might become more luscious and juicy. With many it was a practice to make three gatherings of the fruit during the vintage, for the purpose of producing wines of different qualities, while other means were resorted to for improving the strength, taste, and flavour: a predominant one was that of twisting the tendrils in order to destroy vegetation, leaving the fruit, for about a month, exposed to

* Vide Travels of Anacharsis the younger, by the Abbé Barthelemi.

† Diod. l. iv. p. 248. ‡ Vide Metam. l. v. v. 449, &c. also Bayle, article Thesmophoria. § Archæologia Græca, vol. ii. p. 360.

the full influence of the atmosphere. After this exposure, the grapes were put into the shade for five days, and, on the sixth, stamped or bruised in a vat; but as this process was found tedious and troublesome, the ripe grapes immediately from the vine itself were put into a cistern, in which was a hole, or vent near the bottom, with a vessel beneath to receive the liquor. In this cistern, a man with his bare feet and legs pressed out the juice, ; but to relieve them from this labour, a piece of machinery was afterwards substituted. This was simply a beam, erected perpendicularly, having a cross acting as a lever, with a pressure of stones above, to give it greater weight or power, and which was worked by means of cordage.—The practice, however, of treading out the juice with the feet, seems still to prevail in most eastern countries.* The Greeks did not keep their wine in casks as we do, for the use of vessels of that sort was unknown to them, as appears from Herodotus, who informs us, that wine was exported from different parts of Greece to Egypt, in earthen jars, which, when emptied, were afterwards sent into the Syrian deserts to preserve the water of the Nile.† The Athenians were famous for making these and other great vessels of earthenware, of which they claimed the invention; but, according to Aulus Gellius, the Samians were the first potters. This seems more probable, as, in the island of Samos, a fine species of red earth is found, from which, with the assistance of linseed oil, iron may be extracted; and from this clay the ancient vases, so much celebrated, are supposed to have been manufactured. These vases were tastefully formed, exceedingly light, and varnished with scented bitumen, receiving a polish like our finest crockery ware, and imparting an aromatic flavour to whatever they contained. Sometimes they were coated on the inside with pitch, mastic, and oil, incorporated with various odoriferous ingredients. Many of these vessels were of enormous size, particularly those used by the Romans, and they were commonly hooped to prevent them from bursting. One is said to have contained one hundred and twenty amphoræ, or 810 gallons of wine, and another is known to have held 210 gallons: but the Greeks preferred jars or vases of much smaller magnitude. The skins of beasts were also used for the same purpose, a custom which continues to this day, where wood is not plenty. The leathern bags, or *borachios*, thus used, were generally made out of the skins of goats, stripped off without being cut, the places from which the legs, &c. had been extracted, sewed up, and the top either tied or sealed. The Arabians of the present day

* Chandlers' Travels, p. 2.

† Herodotus, b. III. chap. i. § 6.

follow this custom, and have a very ingenious method of taking off the skins. The head of the goat, or sheep, is first removed; and while the body is yet warm, the hand is introduced beneath the skin of the neck, and worked round until the two forefeet are drawn out. The skin is then stripped off so as to be without a cut or mark on it, and this forms the leathern bag just described. The bottles mentioned in Scripture were of this sort, the use of glass being then unknown. So we read, that when Abraham sent Hagar away, he put a bottle of water upon her shoulder, and hence our Saviour's instruction not to put new wine into old bottles, meaning that the fermentation of the wine would, more readily, burst an old than a new bottle of this description.*—It is generally believed, that the skins of animals were the most ancient receptacles of all liquids, but more especially of wine and they were rendered water-tight by a coating of resinous, oily matter: it was the skin of a goat in which Ulysses carried a supply of wine presented to him by the priest of Apollo, when he visited the cavern of the Cyclops. The largest of these wine-bags, of which there is any account, was that exhibited at a feast given by Ptolemy Philadelphus, and drawn on a car 75 feet long by 42 feet broad: this bag was composed of panthers' skins, and contained 20,250 gallons. The modern Greeks convey their wines to different parts in leathern or skin bags, such as those used by the Spaniards and Portuguese for the same purpose; and they are preferred to every other sort of vessel in consequence of being more portable. It is the practice, in many parts of the East, in making such wine-bottles, to turn the hairy side of the skin inwards. To the Gauls, who settled on the banks of the Po, we are indebted for the useful invention of preserving wine in casks or vessels of wood.†

As chemistry may be said to have formed no part of the general knowledge of the ancient Greeks, it would be vain to look for any thing like distillation among them; for, although an ingenious and polished people, they do not appear to have been acquainted with that art. Medicine was much esteemed by them, but their pharmacopeia, until a late period, scarcely ever extended beyond the list of simples used by Hippocrates.‡ Their early intercourse with the Egyptians made them familiar with the working of metals, but none of their writers anterior to Pliny, whose works have descended to us, shew that they were acquainted with the raising of steam or vapour to the same extent or in the manner described by that celebrated Roman.§

* Matthew ix. and xvii. † Rollin.

‡ For a list of these simples, see Le Clerc's Hist. de la Med. part I. b. iii. cap. 23.

§ Vide page 11 of this work.

Dioscorides, who was physician to Cleopatra, and contemporary with Pliny, was obliged to collect essential oil on the fleece of a sheep, a proof that he knew no other mode of distillation. One hundred and thirty one years subsequent to this, Galen, a celebrated physician of Pergamus, who wrote many books not only upon medical, but philosophical subjects, speaks of distillation *per descensum*, but it is conceived he meant nothing more by this than what regarded the melting of metals.

Faber,* a writer in alchymy of some eminence, states that the art of distillation was known to Democritus, who was contemporary with Hippocrates, "primus enim inter Græcos distillandi peritus fuit Democritus distillationis autem peritiam didicit in Egypto," and that alchymy flourished in the time of Hermes Trismegistus, in Egypt, about A. M. 2434. He admits that neither Hippocrates nor Galen knew any thing of distillation; yet it appears extraordinary, that the most enlightened people on the earth should have remained ignorant of this art, 561 years after Democritus, unless it was kept a secret by him as well as by the Egyptians.—In the 12th chapter and 20th verse of St. Paul's epistle to the Romans, there is a metephorical allusion to the same practice, which is thus beautifully expressed by Parnell:—

> So artists melt the sullen ore of lead,
> By heaping coals of fire upon its head;
> In the kind warmth the metals learn to glow,
> And free from dross the silver runs below.

In like manner, Caligula, according to Pliny, endeavoured to collect, by sublimation, gold from orpiment, a mineral substance found in different parts of the world.† Theophrastus and Dioscorides also describe the extraction of tar as effected by a similar process; and it is strange, that the same mode of obtaining it is still followed by the people of the northern provinces of Sweden.

During the reign of Dioclesian, who succeded Marcus Aurelius Numerianus, in the year 284, we find the Egyptians had carried their speculations in chemistry so far as to induce that emperor to publish an edict for the suppression of all the ancient books that treated of the art of making gold and silver, and which he wantonly committed to the flames, being fearful, that if they became wealthy, they would be induced to resist the Roman yoke, and set him at defiance.‡ But

* Faber wrote in 1627, and his works were printed at Strasburg in 1632.

† Pliny, b. xxxiii. cap. 4.

‡ Vide Suidas in voce Χημεία, Gibbon, vol. ii. p. 137.

although this branch of speculative knowledge gave rise to many useful experiments, and was carried to a great height, we learn from the commentary on the second book of Aristotle's Meteors, written by Olympiodorus, a peripatetic philosopher, who flourished under the second Theodosius, that distillation was not then known, at least in a more improved state, than it was 400 years before; for he says, that "Sailors, when they labour under a scarcity of fresh water at sea, boil the sea-water, and suspend large sponges from the mouth of a brazen vessel, to imbibe what is evaporated, and in drawing this off from the sponges, they find it to be sweet water."

It is said that Zosimus, the Panopolite, who lived at the close of the 4th or beginning of the 5th century, has given some figures of a distilling apparatus, which Olaus Borrichius, the learned Danish professor, has exhibited in his *Hermetis et Ægyptiorum Chemicorum Sapientia*, p. 156. This Zosimus was the first who used the word *chemia*, which, in the Arabic language, signifies concealment, and from which Boerhaave and others derive the term chemistry, implying the hidden or occult science. Zosimus was a man of considerable attainments, he wrote twenty-four books of Imouth, or chemistry, addressed to his sister Theosebia. Most if not all, of these treatises are preserved in the king's library at Paris, but have not yet been translated. From the specimen and account, however, which Borrichius gives of them they seem to be mystical and enthusiastic.* Zosimus is of opinion, that both the name and science of chemistry existed before the flood: and there is certainly reason to believe, that as the arts had been cultivated by the antediluvians, that the ancient Chaldeans and Egyptians preserved traces of them, which were not obliterated when the philosophers and historians of Greece visited Africa and Asia; they are even discernible amidst the confusion of names, dates, and lapse of time, in spite of the clouds of fables with which they are enveloped. Hence it is not unlikely, that Vulcan and Tubal-Cain are the same person, since both were skilled in such works as required the operations of fire; and that *Vul-can* is but a corruption or contraction of *Tubal-Cain*, appears highly probable.

In tracing the etymology of the word chemistry, it seems to be derived from the name of the country in which it first had existence. Egypt is frequently denominated by the Hebrew writers the land of *Cham;* and Chami, or Chemi, was the name by which it was most generally known to the aborigines. Plutarch says, that Egypt was called *Chemia*, from the blackness of the soil. Cham in Hebrew signifies *hot*, *Cham* also signifies *black;* and Chemia,† but with an *ain* for the final

* Boerhaave's Elementa Chemiæ.

† Valpy's Classical Journal, vol. xviii. p. 229, &c.

radical, signifies, in Chaldaic, fermentation. From this reasoning, it is no stretch of inference to assume, as before hinted at, that the doctrine of fermentation was known even before the deluge, and there is therefore nothing extraordinary in Noah's having made wine, and subjecting himself to its influence.

Sometime previous to the period in which Zosimus lived, and for a series of years afterwards, chemistry was cultivated with great earnestness by several Grecian ecclesiastics, but their efforts and attentions were principally directed to the art of making gold and silver. In the meantime, medicine received considerable improvements from the labours of Oribasius, Actius, Alexander, Paulus, and others.

Distillation, it is related, was discovered in the Augustine age by a Grecian physician, who, while sitting at dinner, was suddenly called away to visit a patient, and found, on his return, that the cover which had been placed over a dish of vegetables was dripping with moisture evaporated from them. Perceiving that the moisture was an extract from the materials in the dish occasioned by heat, he is said to have directed his studies to the consequences that might result from experiments made on this principle, and ultimately arrived at the art of distillation; but this story rests on such slender testimony, that it is not entitled to more than this incidental notice.—Some will have it, that the invention of distillation is much older, and ground their opinions on the circumstance of a chest having been found in the Alestine field, near Padua, in which, it is said, an urn was enclosed by Maximus Olybius, devoted as an offering or present to Pluto, containing two phials, most curiously wrought, the one of gold and the other of silver, both full of an exquisite liquor, which fed a burning lamp for many ages. Upon the chest was inscribed:—

> This sacred gift to Pluto I forbid
> A thief to touch, (for 'tis a secret hid),
> With art and pains hath great Olybius pent
> In this small chest the unruly element.

On the urn were the following couplets:—

> Begone, ye thieves, why dare you here to pry,
> Depart from hence to your god Mercury;
> Devoted to great Pluto, in this pitcher
> Lies a grand gift, the world scarce knows a richer.*

This legend, like the other respecting the origin of distillation, rests on authority equally trifling, and is one of those fanciful conceptions

* Taylor's Antiquitates Curiosæ.

of the alchymists, as preposterous as the touch of the philosopher's stone is extravagant. This reminds me of the allegory of the cup of Jemsheed, the supposed inventor of wine, which, the Persians say, was cut out of a ruby or carbuncle, and contains the elixir of life buried under the ruins of Istakhar.

While the Grecian physicians and ecclesiastics were busied in the pursuit of chemical knowledge, the Saracens, then an ignorant and barbarous race, headed by the Caliph Omar's general, Amru, possessed themselves of Alexandria, and, in the madness of their zeal, destroyed the famous library in that city; the Caliph assigning to his general as a reason, that if the books it contained agreed with the Koran, they were useless, and if they differed from it, they were pernicious, and ought to be destroyed.—The loss of so vast an accumulation of human knowledge, not less than 700,000 volumes, which the Ptolomies laboured so long in collecting, must ever be lamented, as it deprived the world, in a great measure, of the discoveries and learning of the ancients, which would have served posterity in the paths of literature and the pursuits of science. The traveller, Ali Bey, felt this so sensibly, that, on visiting Alexandria, particularly the baths of Cleopatra, in that city, in the heating of which the library is said to have been consumed, exclaimed,—"Nothing, absolutely nothing, concerning those distant periods, is handed down for our instruction.—Oh! library of Alexandria! why art thou wanted! What an irreparable loss!—But I respect the decision of the caliph."* As the progress of their arms introduced the Saracens to a more general knowledge of other nations, a taste for civilization and the cultivation of literature, gradually, gained ground. Colleges and seminaries of education were erected and endowed, while learned and ingenious men were encouraged and sought after. Some of the Caliphs themselves excelled in the learning of the day. Almamun, in particular, who ascended the Moslem throne, in the 198th year of the Hegira, (813th of the Christian era,) had attained to great perfection in various branches of science. He not only employed learned men to translate the books he had purchased, at an enormous expense, from the Christians of various nations, but likewise promoted, by all possible means, the study of every branch of literature on which they were written, and even read them himself with an almost unparalleled ardour.

As might be expected, from the nature and pursuits of the nations from which the Saracens imbibed their taste for literature, alchymy and medicine became their favourite studies. The works on those

* Travels of Ali Bey, 4to. vol. i. p. 322.

subjects are so various and abundant, that the enumeration of them, if practicable, would be both unnecessary and foreign to the design of this treatise.

Under the Caliph, Almoktader Billah, who got possession of the caliphate in the 908th year of the Christian era, flourished the celebrated physician Rhazes, whom Abu'lpharagius styles the phœnix of his age. He excelled in every branch of knowledge then extant, but principally in physic, in which he became so bold and successful a practitioner, that he was called the Experimenter, and the Arabian Galen.* He is said to have first introduced chemical preparations into medicine; for, not to mention mercury extinct and sublimate, he notices the oil of eggs, a chemical medicine; besides, he gives us the first account of the *oleum benedictum philosphorum* (philosophers' blessed oil), and is very particular in explaining the manner of making it in a glass retort, well luted, (luto sapienter, says the interpreter,) such as will bear the fire; the heat being increased by gentle degrees, till a red oil comes off by distillation.

Whether the retort, alembic, or any regular distilling apparatus was earlier employed amongst the Arabians, there is no exact account; for what we find from the old Greek chemists, as they are called, relates only to the fusion or transmutation of metals.

It is said, that Al-Mokanna, the Veiled Prophet, whose life and actions are so beautifully detailed by Moore, in his Lalla Rookh, when likely to be taken by the troops under the command of Almohdis' general, in the year of the Hegira 163, or 780 of our era, to avoid falling into the hands of his enemies, after poisoning his whole family and followers, threw himself into a vessel of aqua-fortis; a preparation which, it is well known, could not be otherwise obtained than by distillation.

In the works of Geber, commonly called the Arab, there are some useful directions concerning the manner of conducting the process of distillation, and in one of his tracts, in particular, he has given much curious matter relative, not only to the nature and formation of aqua-fortis, but of salts and acids in general. Geber had distinguished himself in alchymy, and, from the ambiguity of his writings on this subject, our eminent lexicographer, Doctor Johnson, derives the word *gibberish*, or geberish. At what period Geber lived, authors are not agreed. According to Leo Africanus, he was a Greek, and flourished in the 7th century.† Others say, that he was born at Seville, in

* Historia Crit. Philosphiæ, de Herbelot. Leo Africanus, &c.

† Leo Africanus, l. iii. p. 136.

Spain, but of Saracen origin, and place him in the 8th century; while some state, that he was a Sabæan, of Harran, in Mesopotamia. Blancanus maintains, that he wrote in the 9th century, and that his real name was *Abou-Moussah-Ds-Chafar-Al-Soli*.—It is to be regretted, that the history of this patriarch of chemistry is so obscure. In a copy of his works, printed at Dantzic, in 1682, he is styled *Rex Arabum*, and *Indiæ Rex;* but for what reason seems difficult to account: that he was either a prince or a king, there is no written testimony. If Geber lived in the 7th century, which is generally supposed to be the true period of his existence, we may the more readily give credit to the curious means employed by the Veiled Prophet to elude the vigilance of his enemies.

The following is a translation of the twelfth chapter of the second book of Geber's Liber Investigationis Magisterii. The perusal of it will afford the reader an idea of the correct views entertained by that author concerning the nature of distillation. His observations run thus:—

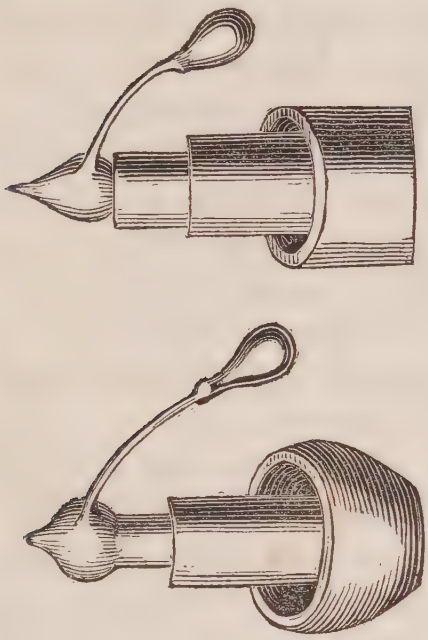
" Distillation is the raising of aqueous vapour in any vessel in which it is placed. There are various modes of distillation. Sometimes it is performed by means of fire, sometimes without it. By means of fire, the vapour either ascends into a vessel, or descends; such as when oil is extracted from vegetables. The object of distillation is to free liquors from dregs and to preserve them fresh; since every thing distilled, possesses greater purity and is less liable to putrescency. The object of distillation by a still is to get water free from earthy substances, by which both medicines and spirits are injured. The motive for conducting distillation by descent is to obtain pure oil, as it cannot be raised by heat into a still. The motive for distilling by a filtre is to obtain pure water. There are two modes of distilling by fire; the one is performed in an earthen vessel full of coals or embers; the other with water in a vessel, with herbs on wood, arranged in order, lest the cucurbit, or still, be burst before it is completed. The first is conducted by a strong, the latter by a gentle and equal fire. Thus it happens, that the heavy and grosser parts are raised by the first means, whilst by the latter, we obtain a more subtile spirit, approaching nearly to the nature of common water. It is well known, that when we distil oil by embers, we obtain oil without any alteration; but when we distil oil by means of water, we obtain fair and clean oil from what appeared excessively red at first. By means of water, then, we must proceed with every vegetable, and things of the same nature, to ascertain their elementary parts. By the descensive mode must we proceed with

every kind of oil. The arrangement of that which is performed by embers, is this: take a strong earthen pot, and fit it to a furnace of the same shape, as that which is used for sublimation; around its bottom let sifted embers be placed, and covered with them up to the neck; then put in the substance to be distilled: finally, let the cucurbit, or receiving vessel, be attached and luted to the neck of the still, that nothing may escape. Let the still and receiver be of glass, and increase the fire as circumstances may require, until the whole is distilled. The second mode is like the first, both in vessel and still, but differs in requiring an iron, or brazen pot, fitted to the furnace as the former, and then upon the bottom of the pot must be placed two or three inches of herbs on wool, to prevent the receiver from being broken, and let the receiver be covered with the same herbs in something similar, up to the neck of the still, and upon these herbs let flexible twigs be strewed, and on them let heavy stones be placed that may compass the still, receiver, and herbs, to prevent the contents from rising, which would break the vessel and destroy the distillation. Fill the pot with water, and apply the fire until the operation is completed. The arrangement of that which is performed by descent, is this: take a glass vessel, having a proper descent, with a lid which must be luted to the descending vessel, put in what is to be distilled, and place the fire upon the lid. The arrangement of that which is to be peformed by a filtre is this: place what is to be distilled in a hollow stone, and let the broad part of the filtre be well washed, and water be placed in the hollow part; let the slender part project over the edge of the stone, under which let a vessel be placed to receive the filtred substance. If not pure at first, put it back, until it becomes sufficiently pure."

"N. B.—At first it will send over only the water with which it was moistened, then the liquor to be distilled."

The better to illustrate the foregoing observations, a representation of the vessels used by him is subjoined, being curious when compared with those of the present day.

Ampulla recipiens.

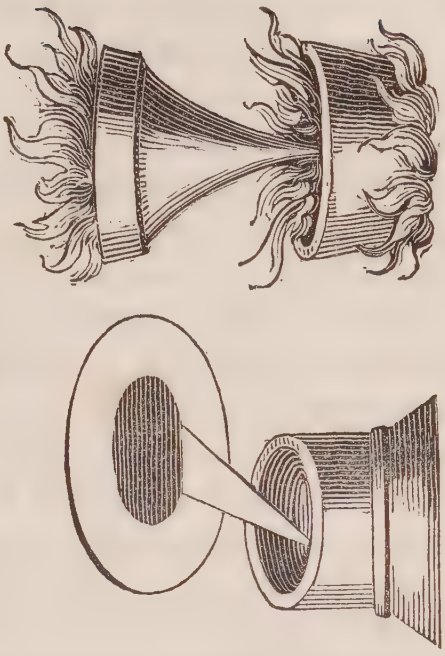


Secundus Distillationis Modus.

Primus Distillationis Modus.

Alembicus Lapideus.

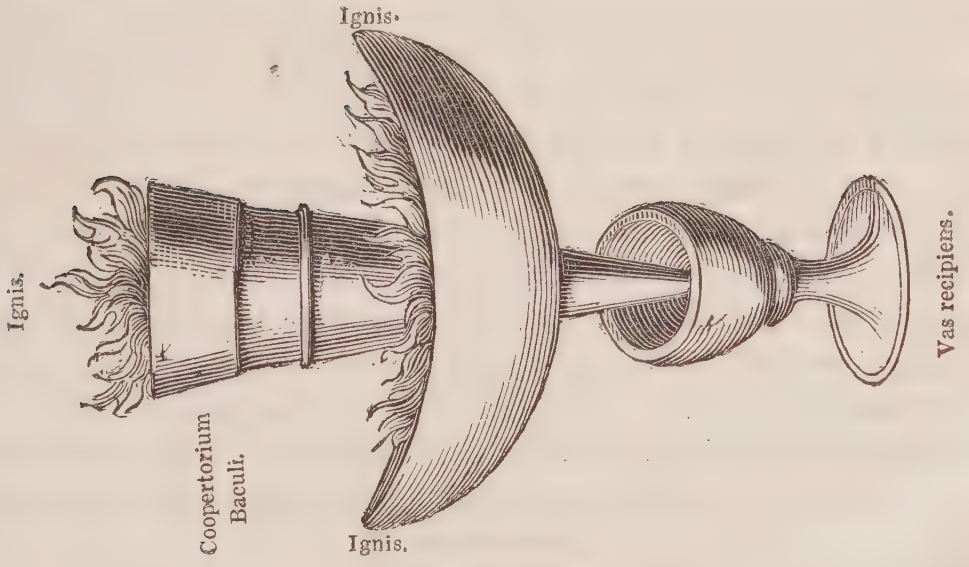
Ignis Receptaculum.



Quartus Distillationis Modus.

Tertius Distillationis Modus.

Concha vas recipiens.



Vas recipiens.

From the remarks of Geber, and his various experiments in chemical science, it is clear that distillation was well understood in his time, and that the mode of conducting pharmaceutical preparations, both vegetable and mineral, had attained considerable perfection. Avicenna, who flourished after Geber, describes the method of distillation, and particularly mentions distilled water of roses. Avicenna is also reputed as the person who discovered the art of making sugar, till then unknown amongst his countrymen. About this period, a knowledge of the arts and sciences was greatly cultivated, and continued to extend in proportion to the conquests of the caliphs; the example and influence of whom diffused a love of literature over an empire, that spread in Asia from the Gulf of Persia, and the confines of Tartary to the Mediterranean and Indian Seas, and comprised all the habitable parts of Africa, from the Isthmus of Suez to the Atlantic ocean.

During the reign of the Abassides, at Bagdad, the mass of human knowledge collected within the walls of that city was astonishing. The shelves of its schools and colleges were bent under the weight of Grecian, Persian, Roman and Arabian literature, and the taste for collections of that nature was carried to such a height, even by private individuals, that we are told of a doctor who refused the invitation of the Sultan of Bochara to reside at his court, because the carriage of his books would have required four hundred camels. At Cairo, in Egypt, the Caliph's library consisted of 100,000 volumes, which were elegantly transcribed and bound; these were cheerfully lent, without any pecuniary consideration, to the students of the city. In Spain, the Caliphs had formed a library of 600,000 volumes, forty-four of which were employed in the mere catalogue. Cordova, the capital of the Spanish Caliphs, with the adjacent towns of Malaga, Almeria, and Murcia, gave birth to more than three hundred writers, and above seventy public libraries were opened in the Andalusian kingdom. Amidst such a profusion of information, we need not be surprised at the acquirements of the Saracens. In chemistry, they certainly excelled all the nations which had gone before them; that comprehensive branch of human research was greatly illustrated and enlarged by their discoveries; and, although it may be lamented, that a great portion of their knowledge lay concealed under the occult mysteries of alchymy, yet, according to Gibbon, the real science of chemistry owes its origin and improvement to that people. That elegant writer says, that "they first invented and named the alembic for the purpose of distillation; analized the substances of the three kingdoms of nature; tried the distinctions and affinities of alkalis and acids, and converted the poisonous minerals into soft and salutary

medicines."* Their speculative and visionary hope of finding an elixir of immortal health, is said to have led them to the discovery of alcohol, and entailed upon posterity the manufacture of a beverage, which, under the more modern name of *aqua vitæ*, has since proved to many a blessing, but to millions a curse.

Although these are *the opinions* generally recorded and handed to us, respecting the arts, industry, and knowledge of the Saracens, yet, I am far from believing, that they are entitled to be accounted the inventors of almost any of those discoveries, which are attributed to them. The East, being the cradle of the human race, and of all the arts, it is clear that the Arabians must have received their knowledge from that quarter. With the Egyptians and Indians, they had early intercourse, and these nations, it is well known, were far advanced in civilization long before, and in the practice of most of the arts, in which the Saracens, afterwards, became famous. The very style of architecture followed in the Eastern countries, was the model of the West, as is confirmed by the excavations of Pompeii, which had been buried nearly twenty centuries in the bowels of the earth. So skilled were the inhabitants, of that unfortunate city, in every thing that related to the comforts, and even the luxuries of life, that a house was found with windows of glass, as fine and transparent, as that made in modern times; besides ornaments of gold and specimens of art, of exquisite workmanship. The Arabs, it cannot be denied, were ignorant and barbarous, when various other portions of Asia, as well as some parts of the North of Africa, more particularly Egypt, were highly polished; and from those sources they must have acquired, in a great measure, the whole extent of their knowledge, in every department of literature. Strabo informs us, that the Arabians built their houses and temples after the model of the Egyptians; and that the Egyptians knew distillation, at a more remote period, than the Arabs, can scarcely be questioned, since Pliny has nearly described the process. If, as has been said, that this art was invented by a Grecian physician, and that the vessel first used in the practice was called *embic*, to which the Arabians afterwards prefixed their definite article *al*, why attribute the invention to them? Since the very derivation of the term is purely Greek, and as the Arabians were, for the most part, indebted to the Grecians for their proficiency in medicine and chemistry.—From these considerations, and the known acquirements of the Syrians, Egyptians, Persians, Chinese, and other Oriental nations with whom the Arabians had intercourse, and among

* Gibbon's Decline and Fall of the Roman Empire.

whom a knowledge of distillation appears to have previously existed, it is evident that this art was handed to them by others, and that they were only pupils, not teachers in geography, astronomy, algebra, chemistry, and architecture, as is generally maintained.

In speaking of the Arabians in this manner, I do not wish to be understood as depriving them of merits to which they are confessedly entitled, and of which so extensive a view has been just taken; but the discovery of the art under consideration, having been usually attributed to them, I was induced to examine minutely the grounds on which this assumption was founded; and although it cannot be decisively ascertained who were really the inventors of distillation, yet I am led to conclude, that the Arabians were the mere improvers, and not those to whom the art owed its origin; and from an attentive perusal of the various articles in this volume bearing on this point, but more particularly the observations on India and China, it is very probable the reader will come to the same conclusion. In addition to these remarks, it may be observed, that while *we* love alterations and changes, the *orientals* preserve uniformity; among us, a dress which was in fashion thirty years ago, is now ridiculous; among them, the same dress, manners, and customs prevail, that were in use a thousand years since; the arts which are progressive with us, are, with them, stationary. The physical and moral character of the orientals reposes on principles like those that existed thousands of years past, making a powerful contrast with those now in the west.—Our mode of life is refined and changeable, theirs simple and permanent; with us there is a constant incitement to civilization, with them rather an inclination to barbarism. Man exists in the east, as it were, among the shades of antediluvian devices; in the west, amidst the glare of modern improvements—hence the Chinese, Persians, and Hindoos are entitled to be considered the inventors of the arts and sciences, and the teachers of them to those who visited them in the remoter ages of antiquity, not the scholars of a few itinerants, nor from having acquired their knowledge from other nations then in a comparative state of barbarism.

All the works of the Saracens appear to be translations or compilations from the Greek, Roman, Persian, and other oriental writings, little originality existing in any of them.—A late publication, at Madrid, of an Arabian Treatise on Agriculture, from an old manuscript in the Escurial, by Ibn' El Awam, in which one hundred and twenty authors are cited as the sources of his information, is a proof of this assertion. Among those authorities, he draws largely from M. Cato, Varro, Columella, Palladius, and adduces the various practices

of Egyptians, Persians, and other Easterns, in agriculture, from writings long since lost.* Mr. Mills says, "that as discoverers and inventors, the Saracens have few claims to praise; a grateful respect for antiquity was corrupted by them into a superstitious reverence, which checked all originality of ideas and freedom of thought. But they formed the link which unites ancient and modern letters; and as their relative situation with Europe somewhat resembles the relative situation between Europe and Greece, they are entitled to a portion of our respect and gratitude.† The silence of the Greek writers is no proof that distillation was not known in the east before their time. It is not likely that a people, whose beverage was wine, in every variety, would think of submitting it to the alembic, in order to procure another kind of liquor, when they considered and accounted wine a drink worthy of the gods.

From the preceding recapitulation, and a consideration of the sources from whence the Saracens drew their stores of knowledge in Pharmacy, Chemistry, Mathematics, and the other arts and sciences, the deduction is natural, that the distillation of spirits is not their invention; and that the term *alcohol* is but another name for *arrack*, or rather for the improvement of that spirit by a higher rectification for alcohol with us, is always understood to signify spirit of wine, of the highest degree of volatilization, the particle *al* (*the*) being prefixed to express something grand or superlative: thus, *alcohol* means *the pure spirit; alchymist*, a chemist of the first order; *alchymy*, the highest degree of chemistry. Again, *alcohol* is compounded of the Arabic article *al* and the Hebrew word, *Kaal*, or Chaldaic, *cohal*, signifying to subtilize, make light or thin. *Alembic* is a compound of *al* with the Greek, αμβιξ, an earthen vessel, or jar, called from its shape the cucurbit, or body. Alchymy is a compound of *al* and χημια denoting the more sublime or occult part of chemistry. Hence the inference is plain, that as the Saracens borrowed those technical terms from foreign languages, they also derived from other nations a knowledge of the arts to which those appellations belonged. The word *al—ka—hol*, or alcohol, was originally applied to the powder, with which the Jewish, Syrian, and other Eastern ladies tinged their hair, and the edges of their eyelids, in order to heighten their beauty; and the name was, in consequence, subsequently transferred to spirits of wine rectified

* Libro de Agricultura, su Autor el Doctor Excelente Abu Zacaria, Ebu El Awam Sevillano, traducido al Castellano y anotrado por Don Josef Antonio Bangueri. De Orden Superior y á Expensas de la Real Bibliotheca.

† History of Mahometanism, 8vo. p. 402.

to the highest perfection, intimating its improved state and fascinating qualities.

It is a well known historical fact, as given by Ebn Chalican, one of their writers, that at the time of the publication of the Koran, there was not to be found in the whole district of Yemen, a single person who could read or write Arabic, and the prophet himself, called the *illiterate*, was indebted to Warakan, his wife's kinsman, and a Christian, for the compilation of the Alcoran, at least so far as regards penmanship. In a country so uneducated, no art nor science of any importance could have flourished; and we find, even after the Saracens had arrived at considerable eminence as a nation, that one of their most enlightened caliphs, Al-Mamon, when reproved by his father for selecting Messue, a Christian physician, to conduct the pursuits of the learned men he had collected, with great frankness observed, "I have made choice of Messue, as an able preceptor in useful sciences and arts; and my father well knows that the most learned men, and the most skilful artists in his dominions, are Jews and Christians." Thus acknowledging the weight of obligation due to those foreign preceptors. The zeal of Al-Mamon, in collecting information, led Takiddin, a bigoted Mahometan, to say, that God would punish the caliph for daring by such studies to disturb the devotions of the Prophet's followers. Avicenna, one of their most eminent physicians, is said to have been indebted to Greek writers for the medical works for which he has been celebrated. Averroes is likewise under obligations to Aristotle, for his celebrity as a philosopher, though it is well known that he was unacquainted with the original, and perused the writings of that great man, by means of wretched Arabic translations. Galen and Hippocrates were the great guides in medicine; Dioscorides the director in botany. Under the withering influence of the Koran, it is surprising how any progress whatever could be made in the acquisition of knowledge. Divided by political dissensions, as well as heretical opinions, and engaged in almost continual warfare, the Saracens had not that independent spirit of research to think and speculate boldly for themselves, nor to rise superior to the trammels imposed on them by others: hence it may be asserted with truth, that the moderns owe little to their discoveries; and that the arts and sciences of the present day have received almost nothing from their industry, so that, in the language of an intelligent writer, it may be said, "Science would suffer no material loss, if the writings of the Saracens be permitted quietly to repose in that oblivion to which time has consigned them." Posterity, however, cannot but cast a grateful recollection to the period when,

but for their fostering protection, learning would have been overwhelmed in intellectual darkness, and a vast portion of mental riches, and valuable materials lost for ever to the world.

I shall now proceed to consider the cause of the prohibition of wine and intoxicating liquors among the followers of Mahomet, illustrating the remarks with such anecdotes as shew that the prophet could not entirely eradicate that part of human imbecility, which renders their use or pleasing qualities in some shape or other desirable. According to a writer in the Universal History, Spanheim and Reland have asserted that the ancient Arabs abstained from wine long before the birth of Mahomet; but it appears from Strabo, that in Arabia Felix, besides the husbandmen, there were many who made palm wine, which, he says, was much used by the inhabitants of that country, proving that intoxicating liquors were not generally forbidden before the time of that prophet.

The causes which induced Mahomet to prohibit the use of inebriating drink, have been stated as various. The Sieur de Ryer, in his life of the prophet, attached to his translation of the Koran, page 39, says, that in the fourth year of the Hegira, while his army were engaged in expeditions against the neighbouring tribes, some of his principal men betaking themselves to play and drink, in the heat of their cups quarrelled, and raised such disturbances among his followers, that they nearly came to blows, and to the overthrow of all his designs. To prevent such mischief in future, he forbade the use of wine and all games of hazard for ever; and to render the prohibition of more influence, he supported it by a fable of two angels, called Arut and Marut, who, in ancient times, were sent from heaven to administer and teach men righteousness in the districts of Babylon, when a certain woman coming to them for justice, invited them to dine with her, on which occasion she placed wine before them, which God had forbidden them to drink; but the agreeable nature of the liquor tempting them to transgress the divine command, they drank to intoxication, and tempted the woman to lewdness; but this was on condition that one of them should carry her to heaven and the other bring her back. As the fable runs, when the woman got to heaven, she would not return, but declared to the Almighty the whole matter, who, to reward her chastity, made her the morning star, and the angels getting their choice whether they would be punished for their wickedness at that time, or at a future period, chose the former, in consequence of which they were suspended by the feet, with an iron chain, in a pit near Babylon, where they are doomed to continue to the day of judgment. For

this reason God forbade the use of wine to his servants ever after.* The prophet seems to assign the reason of the prohibition in the Koran altogether to the quarrels which wine and games of chance had caused amongst his followers; for in the 5th chapter of that book he says, "The devil desires to sow dissensions and hatred among you through wine and games of chance; be obedient to God, and the prophet, his apostle, and take heed to yourselves." The learned Mr. Sale seems to agree with the Sieur de Ryer, that it was the divisions and disturbances in company, and the neglect, or at least indecencies in the performance of religious duties, occasioned by inebriety, which induced the prophet to pass so strict a prohibition.† In this restriction, it is probable that Mahomet was guided by the Mosaic law, under which the priests were forbidden to drink wine or any intoxicating liquors, when they were about to enter on, or execute, any sacred or religious duty. "Do not drink wine," says the inspired writer, "nor strong drink, thou, nor thy sons with thee, when ye go into the tabernacle of the congregation, lest ye die; it shall be a statute for ever throughout your generations."‡ The Nazarites§ and Rechabites, as well as many pious persons among the Jews and primitive christians, abstained altogether from wine, and we find injunctions of a prohibitory nature observed among the Egyptians, Carthagenians and Greeks: so that the mandate of the prophet in this respect is not without a precedent.‖ The Carthagenian soldiers were forbidden wine while in the field, under the severest penalty; and their magistrates were also obliged to abstain from wine during the exercise of their power, though

* Prideaux's Life of Mahomet, 8vo. p. 111.

† Sale's Koran, chap. ii. p. 39; chap. iv. and v. ‡ Levit. x. 9.

§ Doctor Lightfoot, in his work already quoted, thus comments on the vow of the Nazarites, as spoken of in the sixth chapter of Numbers: "Whilst I a little more narrowly consider, that severe interdiction by which the Nazarites were forbidden the total use of the vine, not only that he should not drink of the wine, but not so much as taste of the grape, nor the pulp, nor stone of the grape, no, nor the bark of the vine, I cannot but call to mind,—1st. Whether the vine might not be the tree in paradise that had been forbidden to Adam, by the tasting of which he sinned; the Jewish doctors positively affirm this without any scruple. 2dly—Whether that law about the Nazarites had not some reference to Adam, while he was under that prohibition, in the state of innocency. For if the bodily and legal uncleanness about which there are such strict precepts (Numb. v.) especially the leprosy, the greatest of all uncleannesses, did excellently decipher the state and nature of sin; might not the laws about the Nazarites, which concerned the greatest purities in a most pure religion (Lam. iv. 7.) be something in commemoration of the state of man before his fall?" Jerm. xxxv. 5. 6.

‖ Ælian, b. II. Hist. vii. Sap. Plato de Legibus.

it is doubtful whether this was always strictly observed; a laudable instance of the wisdom of their government.

Abulfeda (in his account of the prophet's night journey to heaven,) observes, that the angel Gabriel brought him three cups, one full of wine, another of milk, and a third of honey; upon which he took the milk and drank it as the most proper of the three, after which a voice was heard saying, "Thou hast made a lucky choice, Mahomet, since, hadst thou drunk of the wine, thy nation would have deviated from the right path, and consequently in their enterprises have proved unsuccessful."* The fact is, that previous to the time of the prophet's pretended mission, the Arabians were given to drink wine to great excess whenever they could get it, in consequence of which, Mahomet, as already quoted from the Koran, very prudently provided against the mischiefs that might ensue from it. But although there is little doubt that the prophet intended by his prohibition a strict abstinence from all intoxicating liquors, yet some have imagined, as Mr. Sale remarks, that *excess* in the use of wine or in inebriating beverages is alone forbidden in the Koran, and that their *moderate* use is allowed by two passages in the same work. The words are, "They will ask you concerning wine and lots; answer, in both there is great sin, and also some things of use unto men; but their sinfulness is greater than their use."† Again, "And of the fruit of palm trees, and of grapes, ye obtain an inebriating liquor and also good nourishment."‡—Such is the weakness of man, that it is easy to give a favourable turn to that which suits our inclinations. The more received and general opinion is, that to drink any kind of strong liquors, either in a less or greater quantity, is absolutely unlawful; and though libertines may indulge themselves in a contrary practice, the more conscientious are so strict, especially if they have performed a pilgrimage to Mecca, that they hold it unlawful, not only to taste wine, but to press grapes for the making of it, to buy or sell it, or even to maintain themselves with the money arising from that liquor.§ Herbelot, the well known French writer, in his Bibliotheque Orientale, says, that there were some Mussulmen so strict, that they would not call wine by its true name for fear of offending against the laws of their prophet; while some of the Arabian princes went so far as to forbid the bare mention of it. Such is the particularity of others that they will not even touch any matter where wine is used. Walpole informs us that, when in Turkey, he was

* Abulfeda de Vit. Mahomet.

† Sale's Koran, chap. ii. p. 39. ‡ Ibid. vol. II. chap. xvi. p. 83.

§ Vide Preliminary Discourse.

enjoined by an Aga to be cautious in abstaining from wine in the room where he lodged; lest the carpets or mats, on which the Mussulmans said their prayers, might be polluted.*

We have an early and striking instance of the strenuous observance of the prophet's interdictory decree, in the treatment of the soldiers under Abu Obeidah, in the reign of the Caliph Omar, who, on hearing from that general, that the Mussulmans had learned to drink wine during their invasion of Syria, ordered, that whoever was guilty of this practice should have fourscore stripes upon the soles of his feet; the punishment was accordingly inflicted, and many were so infatuated, although they had no accusers but their consciences, as voluntarily to confess their crimes and undergo the same punishment.†

That the drinking of wine was not so obnoxious to some of the successors of Mahomet, there are several examples among the Caliphs. Yezid, who commenced his reign in the 60th year of the Hegira, is the first of them who made no scruple of the practice. The following story is related of Almohdi, father of Haroun Alraschid, the hero of the Arabian Nights' Entertainments. That monarch, being one day on a hunting excursion, strayed from his attendants; when being pressed with hunger and thirst, he was obliged to repair to an Arab's tent to procure some refreshment. The poor man immediately brought to the Caliph some brown bread and a pot of milk. Almohdi asked him if he had nothing else to give him; upon which the Arab presented him with a jug of wine. After the Caliph had drank a good draught, he enquired of the Arab whether he did not know him? The other having answered that he did not, "I would have you know then," replied Almohdi, "that I am one of the principal lords of the Caliph's court." After he had taken another draught, he put the same question to the Arab, as before, who answering, "Have not I already told you that I know you not?" Almohdi returned, "I am a much greater person than I have made you believe." Then he drank again, and asked his host the third time, whether he did not know him? to which the other replied, "that he might depend upon the truth of the answer he had already given him." "I am then," said Almohdi, "no less a personage than the Caliph, before whom all the world prostrate themselves." The Arab no sooner heard the words, than he tremblingly carried away the pitcher, and would not suffer his guest to drink any more. Almohdi being surprised at his behaviour, asked him, why he removed the wine. The Arab replied, "Because I am afraid that if you take

* Walpole's Memoirs relating to European and Asiatic Turkey, 4to.

† Ockley's History of the Saracens, vol. i. p. 171, 324.

a fourth draught you will tell me you are the prophet Mahomet; and if by chance a fifth, that you are God Almighty himself." This gentle rebuke so pleased the Caliph, that he could not forbear laughing; and being soon rejoined by his people, he ordered a purse of silver, and a fine vest to be given to the poor man, who had entertained him so hospitably. The Arab, in a transport of joy for the good fortune he had experienced, exclaimed, "I shall henceforth take you for what you pretend to be, even though you should make yourself three times more considerable than in this instance." Time, which unhappily too often destroys the best resolutions and propensities of our nature, has rendered the crime of inebriety less uncommon among the Mahometans of the present day than formerly; but since their intemperance cannot be induced by social hilarity, it is always with them a solitary vice, and consequently, to use the language of a late writer, though not more hateful, is much more odious than when it arises from the desire of promoting the exercise of the social feelings. There is an anecdote told by Russell, in his History of Aleppo, which, as corroborative of what is here advanced, an apology for its insertion is scarcely necessary. It relates to a Sirdar of high rank at Aleppo, who was fond of indulging in the pleasures of the bottle. This man, says the author, was in the habit of retiring to one of the gardens near the town, to enjoy his wine more luxuriously in a kiosk. Returning one summer's evening from a debauch of this kind, he observed, as he passed near the Christian burial-ground, a Maronite sitting on a grave stone and smoking his pipe, who, on seeing him approach at some distance, rose up, laid down his pipe, and at the same time attempted hastily to conceal something in his pocket. This the Sirdar suspected, and justly, to be arrack; therefore, stopping his horse, he despatched one of his attendants to bring the culprit before him. The Christian was not only reproached for drinking thus publicly, but threatened with instant punishment, for having aggravated the crime by drinking on a tomb-stone. Upon his swearing, by the Gospel, that he had tasted no strong liquor for a week, orders were given to search his pockets; but he had taken care that no testimony should appear against him from that quarter, by dropping the empty bottle before he was seized. The Sirdar then commanded another of his attendants to try whether the charge might not be proved from the criminal's breath. "Breathe ye, Giaour," exclaims the Janizary, "breathe full in my face." The trembling culprit at first hesitated, but knowing the consequence of refusal, was at last obliged to comply. "I knew very well," said the Sirdar, "I should detect this Jew of a damned Christian. Does he not smell abominably, Mustafa? bring him nearer me, don't you

perceive his breath?" "Why, really," replies the half drunken Janizary, "that there is a strong smell of arrack among us cannot be doubted, but whether it proceeds from yourself, Sir, from me, or from this damned infidel, may I perish if I can justly determine."

If Madden, a late writer, may be credited, intoxication is much more prevalent with the Mahometans than is generally believed. He states that hospitality among the Turks is not surpassed even by the Irish. The excellence of their cooking, the number of their dishes, and the profusion of their sweetmeats, gave him an exalted opinion of their luxurious living. At dinner, he observed upwards of forty dishes furnished in succession, and, contrary to our practice, the desert was the first, consisting of sweetmeats and preserves. After the desert, the appetite was whetted with an abundance of raw spirits, the very highest class drinking rum and raki, with the same familiarity that we drink beer, ale, or porter. He says the most exalted characters in the empire are addicted to drink, and that the Sultan daily receives, from his apothecary, a bottle of Rhenish wine, with the word "*physic*" on the label. Another traveller assures us that drinking is common among the most respectable, and mentions a Sirdar of high rank, who openly braved, by this practice, the commands of the prophet, and confessed that he could not live without the aid of spirituous liquors. Even in Mecca, it is said, that there are two shops in which intoxicating liquors are publicly sold, during the night, but not in the day time. One description of liquor thus sold is made from fermented raisins imported from Tayf, and, although diluted with water, a few glasses of it produces intoxication; the other is a sort of bouza mixed with spices and called *Soubye*, a beverage well known at Cairo. Neither the sanctity of the Holy City, nor the solemn injunctions of the Koran, are able to deter the inhabitants from the excessive use of spirituous liquors. Large quantities of Raky are imported from India, which, when mixed with an extract of cinnamon sweetened with sugar, is sold under the plausible name of *cinnamon-water*. This liquor is drunk by the highest characters, under the impression that it is neither wine nor brandy, and therefore not prohibited by the law. Burckhardt saw at Tayf, a Turk, in the suite of Mahomet Ali Pasha, who distilled brandy from grapes, and sold it publicly at 40 piasters the bottle. Intoxicating liquors are vended at the very gates of the mosque, which, although prohibited in every part of the Mahometan states, is still more so in a city, the approach to which is forbidden to any but the faithful. This impropriety has given rise to the Turkish saying, that "the cities forbidden to infidels abound with forbidden things." Dr. Madden is of opinion that a moderate use of spirits would be a pre-

ventive to the plague, and grounds his notion of its value on observing, that those who were in the habit of attending persons infected, and who habituated themselves to inebriety, never caught the contagion. These considerations led him to administer wine and brandy to his own patients, which treatment was almost invariably attended with success. A similar practice for the cure of diseases was long previously observed by an empiric with success. This quack, who was totally ignorant of medicine, made use of warm punch in the cure of every disorder. When asked by an old acquaintance how he could presume to become a physician and expose his life, should one of the faithful fall a victim to his ignorance, he replied, that he sufficiently learned the art from the practice of the physician who had attended his late master, whose chief prescription was punch, of which the doctor himself partook. This gave him a high opinion of its virtues. He tried it on himself, and found it so agreeable and salutary that he was led to limit his prescriptions to it; and as it met with general approbation from his patients, he was amply rewarded, not only on that account, but for the numerous cures which its use had effected. The Sultan, Soliman the first, was such an enemy to intoxication, that he had recourse to the most rigorous penalties to check the progress of this irregularity. He even caused melted lead to be poured down the throats of the obstinate transgressors of the precepts of the Koran. Soliman the second, his son and successor, was the reverse of his father's character; he went by the nickname of *mest*, or the drunkard, but, amidst all his intemperance, he never neglected his daily prayers, though he seduced the nation by his example into the most unblushing debauchery. "Let others put their trust in man," said this jovial Sultan, "I throw myself into the arms of the Almighty, and resign myself to his immutable decrees. I think only of the pleasures of the day and have no care for futurity." Murad the fourth, seduced by the example of Beari Mustafa, not only drank wine in public, but permitted his subjects to use it without restraint, and even compelled the Mufti and Cazy-askers to drink it. Busbequis saw an old man at Constantinople, who, when he took the glass in his hand, summoned his own soul to take refuge in some corner of his body, or to quit it altogether, to avoid participating in the crime, or being polluted by such indulgence. Thornton tells us that he saw a habitual drunkard carefully remove his mustaches to preserve them from defilement before he took his draught, and immediately after swallowing it, he distorted the muscles of his face, as if he had been taking nothing but a bitter or disagreeable medicine.* Slade relates,† that when the Ali Effendi,

Present State of Turkey, 2 vols. 8vo.

† Records of Travels in Turkey, Greece, &c. 2 vols. 8vo.

governor of a province, received a copy of a Hatti Scheriff, or order of the Porte, to enforce the prohibition of wine and spirits; he and the Cadi being half tipsy at the time, put off its reading to the next day; but having cast their eyes over it, they exclaimed, "Here is an order against drinking, and we are drunk when it arrives; they who sent it must surely have been drunk also, for not knowing that we would disregard it."

In further illustration of the propensity of the followers of Mahomet towards the use of inebriating liquors, it is related of Achmet Cachef, the present governor of one of the provinces in Upper Egypt, that he was fond of the bottle. When visited by some English gentlemen, who were requested to partake of some refreshment, that Pacha directed his attendant to bring him a bottle of the water of which the Franks were so fond. Accordingly, a bottle of a strong spirit, made from dates, was produced. The guests were pressed to partake of it, but declined. The Pacha then said, that although the prophet had forbidden raki, he would himself take some, to convince his friends that he had no intention of poisoning them. He then took off his glass, and repeated the example seventeen times, by way of encouragement for his guests to drink during the four hours they remained with him. In the course of the interview, he observed that, "notwithstanding they seemed shy in drinking with him, he would stake any money that their baggage was well stored with all sorts of wine and liquors." This being construed into a civil hint to obtain a present of that description, the interpreter was directed to say they had a supply, and to know what sort he would choose, whether brandy, gin, or rum, "Oh!" replied he, "I like them all three"—which expression caused a hearty laugh, and induced his friends to present him with a bottle of each. It was not long after when the corks were drawn, and pledging them in a bumper, Achmet observed, that if Mahomet should ask him why he drank, he would throw the whole blame on his friends, as the liquor was so excellent.* A late traveller states, that when he had retired to rest at the house of Ali Bey in Damanhur, he heard a gentle knock at his door, and, on opening it, found that the intruder was the Governor's treasurer, a strict Mahometan, who had availed himself of the solitude of the night to communicate a secret which was no less than a request that he might be favoured with a bottle of rum. Having had a trial of its good qualities before, he was in such raptures with it, that he was impelled to make this request. It was at first refused, but the Mussulman pressed so hard, and that

* Webster's Travels, vol. ii. p. 8.

with an assurance that he would drink it with great moderation, his request was granted. On being presented with the bottle, he seized it with great eagerness, and placing it under his cloak, with much precaution, he disappeared amidst the windings of the building, in an instant, highly delighted, and muttering thanks as he retired.*

Some of the principal officers of state are so fond of spirits, that they procure it at any expense, and convey it home, without the knowledge of their servants, carrying it in small leathern bottles, or in tubes of the same material twisted round the body. In this manner it is brought into the most secret recesses of the Seraglio, even at the risk of life; and we are assured by Madden, who had access to the harems of many of the Turkish nobles, that the ladies consume considerable quantities of wine under the name of an Italian cordial, called *Rosolio;* whereas, if the wine were offered under its true denomination, it would be rejected with scorn. Carne saw this exemplified in a rich Islamitic merchant, who, when asked to drink *wine*, expressed high indignation, but when the same liquor was presented to him under the name of *Rosolio*, he took off a large bumper with great cheerfulness.†—Excuses of a very trivial nature are taken advantage of. Some affirm, that because the term *rum* is not in the Koran, the use of it was not forbidden by the Prophet. Captain Trant, in his Journey through Greece, relates, that while on a visit with the Bey, he got a peep into one of his store-rooms, in which he saw a number of bottles, labelled with the word *Rhum*, to which the proprietor had frequent recourse.‡—The Greeks subject to the Turkish yoke, are often as much afraid of being seen by their masters when taking wine, as one Mussulman is afraid of being observed using it by another. Carne was witness to a circumstance of this kind, in the vicinity of Constantinople. When at a meal with some Grecians, who were regaling themselves with white wine, the approach of a body of Turkish cavalry so affrighted the poor fellows, that they immediately concealed the wine, and substituted water. In a private visit which Doctor Clarke was permitted to make at the Sultan's Seraglio, he observed, in the secret chambers, labels, bearing Turkish inscriptions, with the word *Rosolio*, *golden water*, and *water of life*,—a proof that neither the Sultan nor his ladies were insensible to the pleasures of intoxication. The same traveller tells us, that throughout Turkey, the dervises, during the Ramadan, would, when alone, eat pork and drink wine, and laugh at the absurdity of considering such things as forbidden.§

* Letters of a Prussian Traveller, 2 vols. 8vo. vol. i. p. 206.

† Carne's Letters from the East, 8vo. p. 203. ‡ Journey, 1830, 8vo. p. 277.

§ Clarke's Travels, vol. viii. p. 86.

Some of our Christian teachers are not more particular in times of as great strictness. Since a duty was laid on wine at Constantinople, it has proved a more productive source of revenue than that arising from any other article in demand. The annual consumption of the city is calculated at 20,000,000 of okes.* But when we consider that there are several thousand taverns licensed, in various parts of this immense capital (which comprises a population of from 4 to 500,000), it need scarcely be a matter of surprise.—The Grand Vizier derives a considerable emolument from these houses, which, under various pretences, he often causes to be shut in order that he may get a present by allowing them to be re-opened. This is a practice of long standing, taverns being very ancient in this capital. Those establishments for public accommodation are not, however, of Turkish origin, but are attributed to the Lydians, they being accounted the first who sold wine by retail, and kept eating-houses for public convenience. The Jews, under the sanction of the Grand Vizier, make a good wine from the grape, called *Altyntach, (golden stone,)* which is sold so low as a penny and three half-pence per quart.—All the necessary apparatus for distilling has not only been found here, but also in the possession of rich individuals, in various parts of the Turkish empire.—Arrack, distilled at Constantinople from the skins of the grapes, is rendered aromatic by the infusion of angelica and gum mastic. It is a clear and transparent spirit when unmixed ; but when water is added, it becomes, first azure ; afterwards opaque and milky. It is a fragrant pleasant liquor, and is sold very cheap.—An inferior kind of *Rakki* is made from prunes.

In many of the provinces, a preparation of mint and pimento, dissolved and digested in water, is a favourite drink. This liquor is remarkably strong : the person who drinks it, for the first time, supposes that he has swallowed the most ardent alcohol Sherbet is, for the most part, a common drink with the Turks, and is usually prepared from a confection of raspberries, strawberries, or apricots diluted in water. Large quantities of conserves made from different fruits, are sold in solid lozenges, and in the hot seasons are considered delicious when dissolved in mountain snow. Cherries, gooseberries, currants, &c. steeped in rose water, with a slight infusion of musk or aromatics, form a beverage in great consumption. At the grand bazaar of Ali Pasha in Adrianople, sherbets are carried about in long bottles, and sold as refreshments : a similar practice prevails in many parts of the East. In some places, cakes made of tamarinds are used

* An oke is $2\frac{3}{4}$lbs. weight.

for sherbets, and are considered valuable on account of their portability. In Mesopotamia, the usual drinks are iced milk and *lebben;* iced sherbet made of honey, cinnamon-water, and spices, besides the juice of pomegranates diluted with water of roses.* The foregoing enumeration comprises the chief sherbets in requisition, though frequently they have drinks under this name, which consist merely of lemon-juice, mixed with cinnamon-water and sugar, with an infusion of violets, raisins, and oranges.

Were beer, such as we have in Great Britain, brewed in the principal cities of Turkey, there is little doubt that the brewers would raise rapid fortunes from its sale; for, as the Mahometans at present regard the letter more than the spirit of their law, they would not be very scrupulous in drinking a liquor which is not prohibited by name. Aaron Hill, in his account of the Ottoman Empire, first published in 1709, recommends a speculation of this nature; his observations being much in point, I shall not abridge them:—

"The love of brandy, wine, and other strong liquors, so much evinced throughout the Ottoman empire, proceeds," says he, "from nothing else but their ignorance in brewing other beverages; for I frequently observed, that when an English ship had brought some bottles of our country beer, or ale, to Turkey, and presented them to such as would afterwards compliment the noted Turks of their acquaintance with a share in drinking them, they constantly express a wonderful esteem and eager inclination to obtain a quantity, assuring us repeatedly, that could they make such *drink* themselves, they never should be tempted to commit a sin, by breaking through the prophet's order to forbear the use of wine and brandy.

"Nothing can be possibly more easily accomplished than the universal wish of Turks and Grecians upon this occasion, would some English brewer, skilled in his profession, make a voyage to Turkey, purposely to use his best endeavours for the introducing of beer or ale into common use instead of water.

"For first, I have sufficiently explained my reasons, to believe that the natives of that country would, with pleasure, drink it, and the price by no means could retard the practice, for so cheap is malt throughout their empire, that they feed their poorest horses with the best of barley; and with so much ease might he expect to thrive therein, that though he sold the liquor he should brew at no greater price than a penny per quart, he must soon grow rich by more than cent, per cent, of clear profit. But so far beyond this lowest compu-

* Buckingham's Travels in Mesopotamia.

tation may he reckon his advantage, that I can experimentally assure him he might sell it (and be never thought too dear,) at full the price it bears in London ; nor would the Turks think more too much, or if they should, the very factory itself, excluding all the other Christians there residing, would enrich him speedily, provided he took care to manage well the brewing of all his liquors.

" If any timorous man," continues our author," objects to the inconvenience of so long a voyage, his being altogether unacquainted with the country and its language, and his want of friends to help on his design, those difficulties will soon vanish, when I tell him that he may bargain for his passage in an English ship, and be supplied with all provisions, even to Constantinople, for considerably less than £20 ; that he will land within a few stones' throw of the ambassador's house, to whom the captain must, of course, present him, if designed to settle there ; that he is bound to grant him his protection and encouragement ; that he may have a dragoman, or an interpreter, to wait upon him for a little charge, and still conversing with his countrymen, maintain a trade almost as free and uncontrolled as if in England."*

Doctor Clarke was witness to the partiality which the Turks shewed towards our porter, as he saw them give thirty shillings for a dozen of it ; and it was purchased with the greatest avidity, as they seemed quite satisfied that it did not come within the forbidding mandates of the Koran. A late traveller observes, that it has often been matter of surprise to him, that among the trading speculations of his countrymen, no man has ever thought of trying a project of this nature. I have at times, says he, questioned merchants on the subject, who have urged, as an objection, the difficulty of preserving it in such a climate ; yet beer is made in England for exportation to the East Indies.†— The only plausible objection which appears to such a speculation, is certainly the heat of the climate. It is, however, probable, that by brewing at particular seasons of the year, or conducting the process in cool cellars, or by means of good coolers exposed to the breezes of the night, or by approved refrigerators, beer or porter might be made of tolerably good quality, at any season or in any climate.

Certainly a liquor of this kind would not only be vastly superior in point of flavour, but more wholesome than bouza, a description of drink very common in the Turkish empire, and in great estimation. Bouza is generally made from barley, much after the manner of brewing beer, but it is of too inspissated a nature, and so badly fermented

* See Aaron Hill's Account of the Ottoman Empire, 4to. p. 90, 91.

† Turner's Journal of a Tour in the Levant, 3 vols., vol. iii. p. 488.

as to render it unpalatable to Europeans. Wine circulates more freely through the dominions of the Grand Seignior, than is publicly known. That of the Dardanelles is sent to Constantinople, to Smyrna, Aleppo, and even to England. This wine will keep to a great age, and, if the vintage be favourable, is preferable to that of Tenedos. Both sorts are of a red colour; that of the Dardanelles, after being kept for 20 or 30 years, loses its colour, but not its strength. Jews are the chief manufacturers of this wine, which is called in Italian, (the language principally spoken throughout the Levant,) *vino della Legge*, because it is pretended that the Jews, by their law, are prohibited the adulteration of wine. Its price, when of a prime quality, brings eight paras* the oke, or about four-pence the bottle. Doctor Clarke tells us, that the Pacha of the Dardanelles was much addicted to this wine; and when he wished to indulge freely, he retired to his villa in the umbrageous recesses of Mount Ida, where he gave full scope to his love of inebriating pleasures, amidst his concubines, musicians, and dancers.

In many parts of Asia Minor, the farmers, although Mahometans, plant vineyards, and cultivate the grape, but do not make wine. The grapes are consumed as ripe fruit, or made up by drying into raisins. From these, a sirup, called petmez, is preserved, and used in their sherbets as sugar. In other places, particularly in Mesopotamia and the adjoining provinces, this sirup is employed as an indispensable ingredient in all their beverages.

In the capital of Syria, the distillation of an ardent spirit from raisins, with a mixture of aniseed is carried on extensively. The privilege of this manufacture, on payment of a certain duty, is alone granted to the Christian and Jewish subjects of the Grand Seignior. According to Baumgarten and others,† large quantities of beer, or zythum, are brewed by the Syrians from the grain of the country; and we have the testimony of Brown, a late traveller, that wine is produced in great abundance throughout Syria; a revenue is raised from it, the vineyards being charged according to the number of vines they contain. Each vine, if of good quality, is considered worth one piastre:—the *miri*, or land tax, of every hundred vines, is ten paras. On the mountains, the vine is now cultivated to some extent, and it is pleasing to see with what neatness and industry its growth is effected, where it might be thought impossible to preserve it from the torrents. The wine, to improve its quality, is prepared by boiling it immediately after the juice

* A para is about the value of an English half-penny.

† In Churchill's Collection.

is expressed from the grape; and to preserve it for use, it is put into jars or large glass bottles. This mode of boiling wine is not peculiar to the inhabitants of that country; it was in general use among the ancients. The Lacedæmonians were famous for it,* and it is still practised in some parts of Provence, in France, where it is called the *vin cuit*, or cooked wine; but there the method is to lodge the wine in a large room, receiving all the smoke arising from several fires on the ground floors; an operation more slow, but answering the same purpose. The Spanish *Vino Tinto*, or tent wine, is prepared in the same way.† The most valued wine, in this quarter, is the *Vino de Oro*, or golden wine of Mount Libanus; this, however, is not boiled, but left to purify itself by keeping.‡ The wines of Lebanon (of which there are upwards of a dozen species) are equally luscious with those of Cyprus, they are very cheap, and might be worth exportation to other parts of the world.§ Jerusalem draws its supplies from the neighbouring villages. In the valleys that lie adjacent to that city, there are good crops of different kinds of grain and fruit. The vine is in a thriving state, and its produce has a rich flavour, not unlike that of Muscadell—its strength is considerable, as was evident from the effect it produced on some of the superstitious devotees who shew the holy places in and about the city.‖ Chateaubriand says, the wine of Jerusalem is excellent, it has the colour and taste of the wines of Roussillon, and is still furnished by the hills of Engaddi.

In Damascus, wine is scarcely to be found. The monks in the convent there have good white wine, and to them a traveller must be indebted for a supply. The sherbet shops are numerous, clean, and neat, each having two or three large vessels constantly full of this beverage, with ice to cool it: the retailers fill a vase with the sherbet, colour it with some fruit, cast a piece of ice or snow into it, and directly present it to your lips:—this is a grateful draught in sultry weather.¶ Nearchus relates that Damascus received the richest manufactures of Tyre in exchange for wine of Helbon, which was the same as the Chalybon of the Greeks, formerly so highly prized that the ancient Persian monarchs drank no other. At Smyrna, a common coarse wine, called *Crassi*, is in current use, which at first is rather

* Archæologia Græca, vol. ii. p. 366.

† The Romans, as appears from Columella, were in the habit of giving to some of their wines a rich and precocious maturity by a particular effect of smoke. Vide *Columella*. L. i. c. 6.

‡ Brown's Travels in Africa, Syria, &c. *passim*.

§ Light's Travels, 8vo. p. 214.

‖ Bramsen's Letters of a Prussian Traveller.

¶ Carne's Letters from the East. p. 379.

disagreeable from its having a strong pitchy or resinous flavour. The higher classes in Syria often indulge in the luxury of wines, particularly the Jews and the Christians; and, according to Russel, it is a practice to drink a small cup of brandy before sitting down to dinner. The wandering hordes of Turcomans, Curdes, and Bedouins, who occupy the mountainous tracts of Syria, are too poor to merit attention; and since nature is easily satisfied where temptations to enjoyment are few, what could be expected from those who shelter themselves under the frail tent, in the cavities of rocks, or beneath the shade of trees, delighting only in the simple repast which their flocks afford. The Druzes, or Derouz, another of the tribes that inhabit this part of Asiatic Turkey and profess Islamism, cultivate vineyards, and freely use wine without regard to the dictates of the Koran. Their manners in this respect are very loose, they curse Mahomet, eat food that he has forbidden, and break the fast of the Ramadan. Warm-hearted and philanthropic amidst their unfrequented mountains and valleys, they share their humble fare with the suppliant or distressed passenger, entertaining him with lodging and every other comfort they can afford, in the most unaffected manner; bestowing the reviving juice of the vine with the same generosity that they part with the least morsel of their bread, in conformity with their own sublime adage,—"God is liberal and great, and all men are brethren." At a remote period, and long before Islamism was known in that region, Syria was remarkable for its wine and the size of its grapes. Paul Lucas speaks of bunches that weighed 45lbs.; and the grapes of Hebron, (mentioned in Numbers xiii. 23) were so large that one bunch had to be borne on a staff by two men. It was with a grape grown in this region, that a favourite lady of the Caliph Jezid was choked; he having presented her with a specimen of the fruit, she let it slip down her throat, and, from its great size, it stopped her breath and stifled her in an instant.

In different parts of Syria, as well as among the Druzes, it is a practice to extract from grapes a saccharine substance, called *debs*, which is used as a substitute for sugar. It is manufactured in the manner of wine, with the exception of being boiled and cooled twice in succession. When the grapes are trodden on, a white earth-like gypsum is thrown on them, from time to time, to make them adhere together; the juice is then caused to flow into a stone receiver, from whence it is carried to a boiler and from that to a second vessel, where it is cooled and skimmed. After this it again undergoes the same process, and is then put into large earthen jars, in which it becomes a sirup. Perhaps this is the *debash* of Scripture, which our translators

render honey, 2 Chronicles xxxi. 15. It is brought into Aleppo in goats' skins, where it is publicly sold in the bazaars. Michaelis conjectures, that the honey mentioned as a portion of the present sent by Jacob to his son Joseph, at the court of Pharaoh, in Egypt, Gen. xliii. 2, was not the common honey of the bee, but a mass of bruised grapes, of the consistency of jelly; and it may probably have been the same as the sirup just mentioned. Shaw speaks of the great traffic, carried on by the Syrians, in this article; and says, that from Hebron, alone, 300 camels, laden with it, are annually despatched to Egypt, besides what are sent to other countries.* Debs, when diluted and fermented, forms the basis of some of the best brandy, distilled in this country; and vast quantities of the most valuable grapes are converted into this luscious material. The Syrian Mahometans take advantage of its saccharine qualities to make an intoxicating beverage; but this they do in secret. Franklin gives an amusing account of a party that he found making it, amongst a number of tombs, between Berout and Mount Lebanon, where they converted one of the stone sarcophagi into a cooler for the liquor: a miserable shift, as he justly observes, to evade the prohibition of the prophet, and substitute Bacchus for death.†

In various parts of Syria, honey is largely collected, and the hives are formed of the same materials as those of Egypt, namely, of clay, being about four feet long and six inches in diameter. They are placed one above another to the amount of ten or twelve, presenting each an aperture, for the admission of the insects, and bearing a pyramidal appearance, protected by an awning, or roof. From the flowers and aromatics, so plentiful in Palestine and Syria, the bees collect the most delicious and abundant quantities of honey; hence the appropriate language of the Scriptures, "a land flowing with milk and honey." The Syrians consume great quantities of it in sherbets and other refreshing liquors; and of the advantages of honey to the inhabitants of this region, Haselquist bears strong testimony.

In all the countries labouring under the delusion of Mahometanism, there is little variety, so far as regards the manners and customs of the people. The Arabians, therefore, may be said to differ slightly from their neighbours the Syrians. Niebuhr tells us, that in many parts of Arabia, the Jews make wine and distill brandy to considerable extent, and that at Sana, in the district of Yemen,‡ large quantities of these articles are manufactured; while in other places a sort

* Vide Harmer's Observations on various passages of Scripture, vol. ii. p. 6.

† Fraklin's Travels, vol. i. p. 371. ‡ Niebuhr's Travels, 8vo. vol. i. p. 250.

of beer, something like the Egyptian *curmi*, was brewed, which received an agreeable taste from an infusion of a grey herb, called Schœbe,* that served as leaven in the fermentation. From the berry of the *cebatha* shrub,† a very strong kind of spirit was extracted, the acid taste of which, he thought, was much improved by sugar. Arrack is sometimes imported into Mocha, from India, as well as into many of the other parts of the Arabian Gulf. From the *Kismis* or *Kischmisch* grape, which, like the arts and sciences of the Arabs, is an exotic from India, *dibs* or *dibis* is made, in the same manner as by the Syrians, and great advantages are derived from it, both in domestic and commercial intercourse.—Wine, for which the Arabian poets have not less than one hundred and fifty appellations, is seldom made except by the Jews and Christians An excellent sort is manufactured, at the convent of Mount Sinai, from the superior grapes grown in the gardens of that establishment, and from the dates cultivated in the vicinity; and good brandy is made by a distiller kept in the convent for that purpose. Grapes are there preserved, by hanging them up in cellars, and prove very refreshing throughout the whole year. The vineyards at Taroot are good and extensive, but are sometimes overflowed by the tides. Malte Brun is of opinion, that it is here should be placed the *Regio Marcina* of Strabo, where the vines, reared in baskets of rushes, were sometimes raised out of their situation by the waters of the sea, and afterwards replaced by means of oars.‡ Although the Arabians condemn the European practice of drinking to excess, yet they do not disapprove of it, when used with moderation, or as a remedy in diseases: it is even considered an absurdity to refrain altogether, from what a gracious providence has so liberally bestowed. Such, however, is the specious enforcement of the law, that if a Jew be convicted of conveying wine into the house of an Arab, he is severely punished, at the same time that the Arab will regale himself with impunity, within his own apartments. At Suez, the inhabitants make no scruple of taking a moderate quantity of brandy, experience having taught them that it is necessary to do so, in order to correct the bad effects of the stagnant and brackish waters, arising from the saline qualities of the earth. According to Doctor Dwight, a similar practice prevails in New England and New York, in the vicinity of the salt lakes: in both cases, it may, however, be questioned, whether it is not the love of the liquor, rather than

* Niebuhr's Travels, 8vo. vol. ii. p. 347. The lichen of the plum-tree, a nativ of the Isles of the Archipelago.

† Ibid. p. 355. ‡ Malte Brun's Geo. vol. ii p. 210

the expediency, which is the real cause for what is accounted indispensable.

The distillation of spirits, in this region, never formed a favourite pursuit : the knowledge of the Arabians in this respect was always limited, and even when the arts, under the Saracens, were at their acme, they had little to boast of, beyond the analysis of simples, with their application to medicinal purposes. In the practice of alchymy almost all other considerations were forgotten, and, as formerly observed, although the honour of the invention of distillation has been attributed to these people, yet they have not, at present, the remnant of an art to shew, that they ever had a pretension to that discovery. Niebuhr met with one of their alchymists, who had spent a long life in search of the philosopher's stone, and he had only then arrived at that point of his experiments, in which he found it necessary to procure an herb, that grew on the mountains of Yemen, fancying, that because the teeth of the sheep, which fed on it, were yellow, it must have the virtue of turning whatever it would touch into gold. Thus, it was, that the Arabian alchymists conducted their operations under the expectancy of changing the coarser metals into gold, and this being the cynosure of all their labours, mystery and enigmatical jargon became incorporated with all their writings, and they carried their speculations so far, as to suppose, that the very elements were under the superintendence of spiritual beings ; and that those beings had an influence over human power and human action. But that the idea of Fairies, Genii, Gouls, &c. mentioned in the splendid machinery of the Arabian Nights' Entertainments, could have originated in this science, as has been supposed by Sir Humphry Davy and Doctor Paris,* there is not a shadow of foundation, unless that of mere conjecture. From the manners and habits of the Orientalists ; the grandeur of their imagery ; the luxuriance of their fancy ; the sublimity of their conceptions, and the metaphysical manner of clothing their ideas, together with the notions they have of multifarious agents of deity, we need not wonder at the extravagance of their descriptions, and the familiarity with which they introduced supernatural agents on even the most trivial occasions, to all which, the Arabian, as well as other Oriental tales, that have been handed down to us, owe their celebrity and fascination.

The Arabians have been so long degraded, that they now afford little interest, either in arts, science, or literature. The Egyptians, whose country is contiguous, are nearly in the same state, though,

* Pharmacologia, vol. i. p. 88.

when treading on their soil, a secret glow of veneration arises for a nation, so long distinguished in the annals of antiquity, for all that was mighty and majestic, whether we consider its almost superhuman structures; its profound erudition; its wonderful inventions, or the splendour, pomp and glory, which surrounded its early inhabitants.—Once they revelled in wines of the most costly nature—now they are contented with a spurious description of their ancient *curmi*, a kind of ale fermented from maize, millet, barley, or rice. This liquor is of a light colour, and, in the hot season, will not keep above twenty-four hours; it is pleasant to the taste, and, though weak, drunk in considerable quantities in this country, as well as at Kahira, and Said (the ancient Sidon), in Syria. The native Christians mostly distil for themselves, from dates, a liquor called by the general name, *Araki*, (perhaps the same as that termed *Horaky* by Belzoni); it is also made from currants, or the small grapes imported from the Seven Islands. When the French were in Egypt, under Buonaparte, the want of wine was supplied by a spirit extracted from dates. This fruit is manna to the people of Egypt, with whom it is an universal article of food; when ripe, the dates have a sweet but insipid taste, and when dried and preserved in lumps, after the stones are extracted, they are extremely good. Of the palm tree, from which the date is collected, Kenneir reckons forty-four varieties; that species, cultivated in Upper Egypt, is of the best description; and the wealth of some places consists in groves of these trees. At Tor, the plantations are registered; most of them are entailed property, and parents portion their daughters with dates, in the same way that the people of Holland portioned off their children with tulips.*—Ripe dates, although delicious, are never refreshing to the palate, but they suit the Turks, who are fond of all kinds of sweetmeats. The tree, which yields this fruit, is here an inhabitant of the desert, and near its roots fresh water is always to be found. Providence has rendered it an invaluable gift to the inhabitants of Egypt, Arabia, and Persia. They not only make of its leaves, couches, baskets, bags, mats,† drinking bowls, and large plates, by way of salvers; but from the branches, cages for their poultry, fences for their gardens:—from the fibres of the boughs, thread, ropes, and rigging for ships; from the sap, a spirituous liquor is prepared; the trunk furnishes fuel; camels are fed upon the stones, after being ground by hand-mills; and, in some places, meal is extracted from among the fibres of the trunk, and converted into bread.

* Sir Fred. Henniker's Notes during a visit to Egypt, Nubia, the Oases, Mount Sinai, &c. 8vo. p. 217.

† Savary's Letters on Greece, vol. i. p. 267.

So celebrated is this productive tree, that writers, both in prose and verse, have made it the theme of their praises, and enumerated not less than three hundred and sixty uses to which the trunk, the branches, the leaves, the juice, and the fruit, are skilfully applied. Dufard El Haddad, an Arabian bard, thus alludes to it, when describing the great canal of Alexandria,—"The woods," says he, "which shade this canal, give to the sailors, who row along its surface, a spreading mantle of green. The cool north wind refreshes the surface of the waves; the superb date tree, with its high-moving and majestic-tufted top, crowned with its cluster of yellow red fruit, leans gently over its banks like the head of a beautiful virgin asleep."—Such is the attachment of the people of the East to this tree, that an Arabian, having returned home after a visit to Great Britain, said, that England wanted but one thing to make it beautiful; "it has not a date tree in it; I never ceased to look for one all the time I was there, but I looked in vain."—The date tree can be as easily ascended as a ladder, being indented, as if constructed for the admission of the human hands and feet, and not by excrescences, as is generally understood; it has no branches, the leaves, which are from six to eight feet long, serving for that purpose. In the Oases, that region so insulated from the rest of the world, and surrounded by the trackless deserts, the date grows to great perfection. Vansleb says the best fruit is brought from El Wah, which lies, three days' journey, inland above Siout. There, dried dates are so fleshy and sweet, that others would be considered sour or bitter after them. From El Wah, observes the same writer, come raisins and good dates, common wine, dried cherries, and the like. Strabo speaks of the mines of the Oases, and both Abulfeda and Edrissi notice the luxuriance of its palm trees. The common wine, alluded to by Vansleb, is thought to be *raki*, or date brandy, which is in much request by the people of the Oases, who, though Mahometans, contrive to persuade themselves that this drink is not forbidden by the prophet Of the fertility of this portion of Egypt, we have the testimony of Olympiodorus, who wrote in the reign of the second Theodosius, and also of the extraordinary fruitfulness of the trees. Corn there, according to him, was whiter than snow, barley was produced twice a-year, and millet three times.* Such is the fertility of Egypt, that Doctor Clarke met with heaps of corn extending nearly a mile in length along the banks of the Nile. No distillation of spirits from grain has, however, been attempted in Egypt,

* Journey to Two of the Oases of Upper Egypt by Sir Arch. Edmonstone, Bart. 8vo. p. 36.

notwithstanding its great abundance. Bouza, an inferior sort of beer, is the only liquor made from it, of which the Arabs throughout Upper Egypt are very fond. They often expose it for sale in a common wicker basket, made so close as to be impervious to this and other fluids. Sometimes a sherbet is made from oatmeal, boiled with sugar mixed with rose water, which is esteemed a cool refreshing beverage; but Bouza is the common article of consumption among the lower orders. The grain used in the manufacture of this drink is never malted; it is mixed with ingredients to render it more intoxicating and palatable; yet from its thick and glutinous nature, it grows sour in a few days. Palm, or date wine, is also in use, and from the inspissated juice of the palm tree, *dipse*, or a kind of honey, little inferior to that of bees, is extracted, which, after being diluted and fermented, makes an agreeable wine. When dipse is intended to be distilled, the fermentation is checked before it becomes entirely acetous, and from this, as well as dates, arrack is manufactured much in the same way as brandy in Europe. It is remarkable, that the spirit made from dates, in most parts of Egypt, has a smoky taste or flavour like Scotch and Innishowen whiskey, yet mellow as if tinctured with honey.—The native Egyptians are now so debased, that they have no taste for improvement or elegant refinement, either in the arts or comforts of life, which so eminently distinguished their ancestors. Still, however, they contrive to gratify their appetites with whatever intoxicating beverage they can procure, and even though under the strictness of the Mahometan discipline, defend the practice of drinking, in various ways, some of which are very ingeniously and artfully contrived. Bruce, when travelling up the Nile, had with him a Mussulman, named Hassan, addicted to drink, who, on one occasion, was desired to procure some *aqua vitæ*, if his conscience would permit him. To which Hassan replied, "the Prophet never forbade *aqua vitæ*, but the drinking of wine only; and even the prohibition of wine could not have been intended for Egypt, for there was no wine in it, except bouza, and bouza, said he, I shall drink as long as I can walk from the stem to the stern of a vessel."—Belzoni found that the scruples of the Egyptians were easily overcome, even for drinking wine, which he exemplifies by an anecdote of a Cacheff, who, on observing that traveller drink a cup of red liquor, which he had poured out of a bottle, enquired what kind of beverage it was. On being informed it was *Nebet, (wine,)* he said, that having heard the English wine was so superior to the date-wine of his own country, he was anxious to have some to drink in secret. When presented with a cup full, (and his interpreter having first drunk some of it to convince him of its

purity,) he swallowed the contents with avidity, and became so attached to this beverage, that, in three days, he nearly exhausted the scanty stock of poor Belzoni.* Under the intelligence of modern rulers, this country, it is to be hoped, will emerge from its darkness. At present, the sugar cane is cultivated in Upper Egypt, the produce and quality of which are good, and, according to Fitzclarence, in the years 1817 and 1818, the Pacha Mahomet Ali was making rapid advances towards bringing the manufacture of this article and of rum to great perfection. A Mr. Brine, who had been a trader to the West Indies, conducted the operations, which were on a very extensive scale. Hopes were entertained that the quality of the rum distilled here would soon compete with the West Indian article in the Mediterranean markets, where it has been sent in considerable quantities. Thus it appears that the Pacha, though a Mahometan, felt no scruple to compound liquors for the infidel Christians, provided he profited by the transaction.—His intelligence and enterprise have enabled him to see beyond the boundaries of superstition and folly, and to shew in this, as he has done in many other instances, that the real interests of a nation are best studied in the pursuit of legitimate gain, and are not incompatible with the duties of true and genuine religion.

Captain Henry Light,† tells us that he found many sugar plantations along the Nile, and that the mode of planting was that of putting the joints of the cane into furrows five or six inches deep, which, after covering with earth, were watered copiously by channels filled with water from the river raised by means of wheels or buckets. An acre and a half thus cultivated, yield about one cwt. of sugar. The juice is pressed from the cane by a mill composed of two rollers wrought by a horizontal wheel turned by buffaloes.

Mead is seldom to be met with in Egypt, although honey is plentiful, and this is somewhat remarkable, as there are few countries where bees are more attended to. The honey, instead of being employed in the manufacture of mead, is used for various other domestic purposes; and transported to different places in the Levant. Maillet says, that in Egypt the bees are fed chiefly on Sainfoin, and gives a curious account of the manner in which this is practised.—The hives are made of clay in the same way as in Syria. As soon as the Sainfoin ripens in the fields, on the banks of the Nile, in Upper Egypt, the inhabitants, from all quarters of the country, collect their hives, and place them on board of boats prepared, or hired for the purpose.

* Travels, p. 98.

† Light's Travels in Egypt, Nubia, and Abyssinia, and the Holy Land, &c. p. 41.

In these they are conveyed along the Nile, resting occasionally to allow the insects to collect the honey in the adjoining districts, and move along the river, stopping at intervals until the whole of the wax and honey is collected. Having finally arrived at the sea, the respective owners take away the hives which they know by the number of the register in which they were set down previous to going out. It is an astonishing fact, that notwithstanding the moving habits of those insects, they have never been known to mistake their respective hives, each instinctively flying to its little cell with undeviating certainty.

The Nubians make bouza in abundance, in drinking which they indulge to excess. It is extracted from *dhourra*, or barley; is of a pale, muddy colour, and very intoxicating.* Although the Nubians profess the Mahometan faith, they are characterised as great drunkards. Burckhardt, who visited Nubia in 1816, remarked, that during the fortnight he remained at Berber, he heard of half-a-dozen quarrels occasioned by drinking, all of which ended in knife or sword-wounds. In the larger villages of Nubia, palm wine is common; it is not unpleasant to the taste, though too sweet to be taken in any considerable quantity: it is usually carried in large goat-skins and drunk out of small cups made from calabashes. Palm wine is generally obtained, by the following process:—As soon as the dates have come to maturity, they are thrown into large earthen boilers with water, and the whole is boiled for two days without intermission; the liquor is then strained, and the clear juice is poured into earthen jars, which, after being well closed, are buried under ground. Here they are allowed to remain for ten or twelve days, during which the liquor ferments; the jars are then taken up, and their contents are fit to be drunk; but this wine will not keep longer than a year, or beyond the next date harvest, if kept longer it turns sour. The Nubians are industrious, and in some parts of Upper Egypt keep the shops for the sale of bouza. Great quantities of the wine and the spirits distilled from dates are consumed at Derr, and sold in houses kept for the purpose, to which many of the upper classes resort in the evening to get themselves intoxicated. Here Maddox found that the Arabs were the chief distillers of Arrack, and which the Mussulmans drunk with satisfaction, and generally undiluted: it is inferior to the Arrack of Cairo, which is flavoured with aniseed.†

* Burckhardt's Travels in Nubia, 4to. p. 143, 144.

† Excursions in Nubia, vol. i. p. 68.

Burckhardt observed that from Siout southward, through the whole of Upper Egypt, date spirits were made and publicly sold, and that the Pasha levied a tax upon the venders. A revenue is also raised by taking from every date tree two clusters of fruit, whatever may be the quantity produced, and laying a duty on all vessels that load dates at Derr. The quantities of dates sent from Nubia to Upper Egypt vary according to the harvest from 1500 to 2000 erdebs annually, each erdeb weighing about two cwt. The date trade, which is extremely profitable, is now for the most part in the hands of the government. In Nubia, as well as in Egypt, a kind of jelly or honey is extracted from the date, which serves the rich as a sweetmeat. Except date trees and a few vines, there are no fruit trees in Nubia.* Bouza is made by the Nubians in the following manner:—Strongly leavened bread made from dhourra is broken into crumbs and mixed with water, and the mixture is kept for several hours over a slow fire. Being then removed, water is poured over it, and it is kept for two nights to ferment. This liquor, according to its greater or smaller degree of fermentation, takes the name of *merin*, *bouza*, or *ombelbel*, *the mother of nightingales*, so called because it makes the drunkards sing. Unlike the other two, which being fermented together with the crumbs of bread, are never free from them, the *ombelbel* is drained through a cloth and is consequently pure and limpid. The *ombelbel* has a pleasant prickly taste, something like champagne turned sour; it is served up in large gourds open at the top, upon which are engraved with a knife a great variety of ornaments. A gourd *(bourma)* contains about four pints, and whenever a party meet over the gourd, it is reckoned that each person will drink at least one bourma. The gourd being placed in the ground, a small gourd, cut in two and of the size of a tea cup is placed near it, and in this the liquor is served round to each in turn, an interval of six or eight minutes being left between each revolution of the little gourd. At the commencement of the sitting, some roasted meat, strongly peppered, is generally circulated; but the bouza itself is esteemed sufficiently nourishing, and indeed the common bouza looks more like soup or porridge than a liquor to be taken at a draught. The Fakirs, or religious men, are the only persons who do not indulge, publicly at least, in this luxury. The women are as fond of it, and as much in the habit of drinking it, as the men. A bourma of bouza is given for one measure of dhourra, three-fourths of the measure of dhourra being required to make the bourma, and the remainder paying for the labour. Crumbs of the dhourra

* Vide Burckhardt, p. 132, 133.

bread are often soaked in water, and after giving it a sourish taste, it is drunk off and called by the traders the *caravan beverage*, *sherbet el jellabe*. Parties are formed to drink bouza in the same manner as tea and coffee parties are in England. At Berber, females prepare the bouza, and, when the drinkers of it wish not to be interrupted, they generally retire to the apartments of the ladies, where there is no intrusion. Nobody goes to a bouza hut without his sword, and the girls are often the first sufferers in an affray arising from drunkenness. At Shendy, bouza is drunk to great excess, and as tobacco is smoked to a degree of extravagance, it is a maxim that he who does not smoke largely will never be a hardy bouza drinker. Here also a sort of sherbet, made from tamarind cakes dissolved in water, is taken as a refreshing, cooling, and wholesome potation. To this place honey is brought in great quantities from Sennaar, which is collected by the Arabs from wild bees, and it is often converted into hydromel. This drink is usually made by diluting honey with water, boiling it, and then fermenting it under the influence of the sun, as is the common practice in Abyssinia, Lithuania, Poland, and Russia. The most simple beverage used by the Nubians is *bour*, a mixture of water and the juice of liquorice.

At Sennaar, a liquor, similar to date wine, is manufactured from dhourra; it is however much less palatable to Europeans from its thick and glutinous quality, and from the burned flavour contracted in the dhourra, which is roasted previous to the short fermentation it undergoes. Bouza is artfully used in this country to ensnare monkeys, as those creatures, like man, seem inclined to partake of the pleasures of intoxication.—For this purpose, a pan full of the liquor is placed at the foot of a tree; and after remaining there for some time, the wary monkey-catcher having retired to a distance and feigning himself asleep, the unsuspicious animals come down from the tops of the trees and regale themselves so largely with the liquor, that they soon become an easy prey to their captors.

We need not be surprised at those irrational animals being captured in this manner, when we find man, even civilized man! taken captive by a like expedient. Captain Boteler relates that, while on the coast of Zanzibar, two sailors deserted, and the Arabs, who were employed to arrest them, fearful of resistance, placed spirits in the way: the men drank it, were therefore easily apprehended, and brought to prison in a state of intoxication.*

The love of strong drink, it is well known, becomes habitual with

* Owen's Voyage of Discovery in Africa, &c. vol. ii. p. 37.

monkeys in a domesticated state; and the Ouran-Outang in particular (which approaches nearer to man than any other animal,) evinces towards it the strongest propensity. Doctor M'Leod, who had a good opportunity of observing the habits of one of these creatures during his voyage home from Borneo, assures us that he would drink grog and sometimes unmixed spirits, and was actually turned out of the boatswain's mess for taking more than his allowance. On his arrival in England, he became very fond of porter.*

On the Gold Coast is found a small quadruped, in appearance like a cat, which the Negroes call *Berbe*, and the Europeans *Wine-bibber*, on account of its great fondness for palm wine, of which it will drink to intoxication.

According to Bruce, the beer of the Abysinians is of an inferior description, and is made chiefly from *tocusso;* but sometimes it is mixed with wheat or dora, at other times all three are mixed together: in general, however, tocusso alone is preferred. The first operation is to grind the tocusso or mixed grain, a fourth part of which is kneaded with leaven and water. This is afterwards put into a jar where it is suffered to remain for two days, and then baked into thin cakes, which are dried on the fire till they become quite hard. The cakes are then broken into small particles, and put into a large vessel full of water capable of holding six times the volume of the grain. Powdered leaves of the Ghesh tree, which have a harsh bitter taste, together with other ingredients, are put in at the same time. The remaining three-fourths of the meal are placed in an oven over a fire with a little water, and kept constantly stirring until it becomes a paste; and as the water is absorbed or evaporates, a fresh supply is added, and the stirring continued until the entire quantity becomes black like a coal. The whole thus prepared, the crumbs, the mass, and the leaves, are put together into a large jar, and left to settle for a day, after which it is poured off and preserved in jars well stopped: at the end of a week, the liquor becomes strong and tartish, and is what the Abyssinians call bouza.† When only two or thee days old, it is said to drink well. This account of the bouza is gathered from Bruce, whose description of it is far from being clear or satisfactory, a circumstance the more singular as coming from so intelligent and indefatigable a traveller, and particularly when the subject affected the moral character of the people in no ordinary degree. Teff and Tocusso are the grain from which bouza is chiefly made, and teff is the principal article from which the bulk of the people make their bread.

* M'Leod's Voyage to China, &c. 8vo. p. 317.

† Bruce's Travels to discover the Source of the Nile, vol. vi. p. 94.

In making this bread, the dough is permitted to become sour, by which means the want of yeast is supplied, owing to the internal action which arises from the generation of carbonic-acid gas. Hence the ease with which the common people make *bouza* as the bread requires but a few days in water, to produce it.

The Teff plant, the *poa Abyssinica* of botanists, grows to about twenty-eight inches in height, not thicker than the stalk of a carnation, smooth and jointed, having at about eight inches from the top, a head composed of a number of slender branches bearing a small crimson flower with a diminutive seed not as large as the head of the smallest pin, but so very prolific as to yield an abundance of meal. It is probable this grain is the *tiphe*, mentioned by Pliny. The tocusso is a black grain growing to about twelve inches high, having four divisions at the top ; it is said to be a species of the *gramen crucis*, or grass of the cross. Of this a very black bread is made, eaten by the lower orders, but it produces the best bouza. *Swoir*, or *Sowa*, another kind of beer, is a common drink. It is made from crumbs of bread, with a mixture of parched barley. They have also a kind of ale, called *sava*, made from barley flour mixed with some intoxicating drugs.

Bouza, the general drink of the country, will appear to be made to a great extent, when it is known, that it is not uncommon to order at one time, bread and beer or bouza for an army of 30,000 men. This, however, is exacted from the peasantry in the provinces through which the army passes, and the people are very exact in supplying their quota, as, in the event of failure, they should have to pay double the value. The distribution to the soldiery is in the proportion of *twenty* pots of beer, *ten* of mead, and *one* cow to one hundred loaves calculated for the subsistence of a certain number of men.

The supply of bouza, maiz, or sowa, is carried by women, called *Gumbones*, from the term *gumbo*, which signifies a jar ; and it is surprising how these poor creatures endure their labour, having often to pass over mountains and the worst roads, where at times they are obliged to crawl up steep precipices, with the jars on their backs, yet they are seldom known to break the jars, though ever so much crowded on their march. They always keep together in gangs, in the rear of the army, and in front of the rear-guard.

In the household of the Ras, or king, there are two ministers, superintendents of the bread, wine, hydromel and bouza. The common utensil used in drinking, is the horn of an ox, though some of the higher order drink out of a golden or silver cup. Many of those horns are so capacious as to hold nearly six gallons, but those of great

magnitude are employed for conveying liquors from place to place. Of this liquor, as well as hydromel, the natives drink largely when they visit one another; and if Lobo is to be credited, there cannot be a greater offence against good manners, than to let the guests go away sober. The liquor, on such occasions, is always presented by a servant who drinks first himself, and then gives the cup to the company in order, and agreeably to their rank and station. Hydromel, next to bouza, is the most plentiful drink. This is owing to the immense quantity of honey which the country affords, and which is so great that the king derives from it a considerable revenue. Honey is also a principal article of food among all ranks of people, and the bees are kept in large cages or baskets hung upon trees; some attach themselves to the branches, others build in the soft wood of the *bohabab*, the large and fragrant flowers of which communicate to the honey a strong perfume. The honey in this country always partakes of the colour of the flower and shrubs from which it is gathered, and Bruce met with some of it like blood, while the honey of those bees that build in the earth is nearly black. Travellers have asserted that wine is not to be had in Abyssinia, but Bruce says, this is a mistake, since strong wine is made at Dreeda, a place about 30 miles from Gondar, the capital; and Salt informs us, that wine is made from a red grape which is common in some parts of the country. Poncet, who was at Emfras, within a league of Gondar, at the time of the vintage, which is always in February and not in autumn as in Europe, saw bunches of grapes, some of which weighed upwards of eight pounds; these grapes were of all colours, but the white in particular were extremely well tasted. Pearce says, that grapes are found in almost all parts of Abyssinia, but no country produces so much as Emfras, owing to an ancient custom of the inhabitants following the wine-business. Here tribute is paid to the king and the Abuna. Every *dass* of wine pays a jar yearly to the king, as they enter Gondar to the market. It is the same in all other capitals of Abyssinia, such as Adowa and Antálo.—The want of proper vessels to hold the wine is very injurious to its preservation, as they have nothing better than earthen jars for the purpose, and these are not glazed within.—The attachment of the people to hydromel and bouza renders wine from the grape less thought of, and, in consequence, the vine is not cultivated so generally as it might be. In the province of Tigrè, there is a small black grape of excellent flavour growing wild, from which good wine could be manufactured. Brandy is in use among the Abyssinians, and their love of strong liquors often hurries them into excesses, which sometimes lead to fatal consequences, as was experienced by Bruce on many

occasions. The brandy made by them is very strong, and is distilled through a hollow cane, called *Shambacco*, from the husks and stones of the grapes, after the liquor is pressed from them. Great quantities are brought daily to Gondar, during the vintage, from Corder Emfras, the grape country.—One would expect, from the contiguity of this nation with Egypt and Arabia, to find in it some degree of refinement or advancement in the arts and sciences: on the contrary, Abyssinia is buried in the grossest ignorance and barbarism, unacquainted with every sort of manufacture, and reckless of every species of information, which would either expand the intellect or ameliorate its condition. More intent on gratifying the passions than in cultivating the social virtues, the Abyssinians indulge in acts contrary to the dictates of human nature among the rudest savages, eating raw flesh cut from the living animal, drinking afterwards even to bestiality, and committing offences against delicacy too obscene to be narrated. Eating raw flesh is not altogether confined to the Abyssinians, for the Thibetians have a similar practice; yet the habits of the two nations are very dissimilar, the latter being a mild, affable and gentle people.

Strange as this custom may appear, it is not less singular that, according to Lobo, the Abyssinians esteem the gall one of the most delicious parts of the animal, and drink glasses of it with the same pleasure that epicures drink the most delicate wines. Pearce says that he has seen them drink blood warm from the animal with an extraordinary degree of relish.*

Notwithstanding these barbarous practices, the Abyssinians are a hospitable people. When a stranger enters a village, he is entertained at the expense of the inhabitants, for the master of the house, where he stops, has only to proclaim that he has a guest, when food and liquor are furnished in abundance. Should the guest complain of insufficiency, the villagers would be obliged to pay double the value of what ought to have been supplied. A traveller may go into any house with the same assurance of welcome as into that of an intimate friend or near relation.

Poncet, who travelled through various parts of Ethiopia, found mead, called hydromel by Bruce, and maiz by Lord Valentia, to be the principal beverage of the people; and describes the making of it nearly as follows:—Several ingredients are employed, of which the basis is barley; this is malted, dried, and pounded fine like coffee, an indigenous root called *taddo*, or *sadoo*, is bruised and mixed with it:

* Pearce's Adventures in Abyssinia, 8vo. vol. i. p. 95.

these are put with water into a well-varnished vessel and mixed with a fourth part of honey: to ten pounds of this water are put two ounces of barley and two ounces of taddo; the whole is mashed together and left in a warm place to ferment; it is occasionally stirred, and in three or four days it becomes excellent mead, pure, clear, and of the colour of Spanish white wine. It is considered a delightful beverage, is sometimes made of great strength, and brandy of a good quality is distilled from it.*

Mussulmen, as well as Christians, are fond of bouza, and some of the former drink so deeply of it that they find it often necessary to sleep away its effects. On one occasion, when Salt dined with the Ras, he observed three large jars of maiz or hydromel at table, each containing about half a hogshead, all of which were emptied during the repast. At another entertainment, he saw about sixteen *bruhles* (a Venetian decanter holding about half a pint) drunk by each person present, ladies as well as gentlemen, a quantity the quaffing of which would put many of our European dames to the blush.† Yet Poncet assures us, that if the king happens to commit any excess, and that it is hinted to him he has done so, he instantly rises from table and retires: a condescension, and sensibility of weakness, to which perhaps no other monarch would submit.

The higher classes of Abyssinians mostly have prudence enough not to get over-intoxicated; still there are numbers who drink to such excess, that they fall off their mules on their way home, and, if no one is at hand to look after them, they are left to the mercy of the hyenas, which range all night through the towns and villages.

Clubs, called *marvers*, are common, and consist of about twelve persons, who meet for friendly communication; and afford opportunities for drinking immoderately. They assemble once a-month, and when a married member happens to be absent, his wife often attends in his stead; and the same practice is observed in the *marvers* of the women, should the wife be absent. Each of these clubs have a priest, who drinks and eats at free cost: he opens the meeting, when all are assembled, by saying the Lord's Prayer, which they all repeat together; and is too frequently, on these occasions, the most inebriated of the party. It is to be lamented that, through all parts of this country, the priests are great drinkers; and Pearce states, that he has known instances of some of them being intoxicated when they had to administer the sacrament.

* Lockman's Travels of the Jesuits, vol. i. p. 218.

† Valentia's Travels, vol. iii. p. 71. Salt's Abyssinia, 4to. p. 412.

The vessels, generally employed amongst the Abyssinians, for drinking, are chiefly formed of bullocks' horns, and are of various sorts and sizes, handsomely finished and ornamented. Those, who serve out liquor, taste it first, by pouring a little into the left hand, from which they drink it, and then, wiping the bottle, or horn, with a cloth, present it to the master.

The Abyssinians do not make beer from teff only, but also from a plant, called *selleh*. Bruce mentions different sorts of teff, of which perhaps *selleh* may be one of the species. They have likewise a good agreeable liquor made from potatoes and honey, which is very intoxicating. The honey of Abyssinia is very plentiful, and is white, hard, and well flavoured.

The use of this material in making an intoxicating beverage, is not only extensive in this country, but also in the adjoining states, and it seems to be a staple commodity. When Alphonsus Mendez passed through Dancali, near the coast of Babel-Mandel, it was with this liquor he was entertained by the monarch, who, on entering the hall of audience, was preceded by a domestic with an earthen pitcher full of hydromel, while another attendant carried a porcelain cup, out of which, without ceremony, his Majesty pledged his guest in a flowing bumper.

In Bournou, two kinds of fermented liquors are in use; the one called *Amderkù* is made from dates steeped in water, then meal is added and the whole squeezed through a cloth. This liquor is used after it has stood three or four days. The other drink, called *Sza*, is made from *durrah*, or maiz, and is extremely intoxicating.

The inebriating drinks used by the other rude tribes of the African continent, whether Mahometan or Pagan, are so much alike, that to describe all would be tedious, and were it possible, useless: a few of the most interesting may suffice.—The beverages of the Negroes are, according to Park, beer and mead, sometimes called hydromel, the latter is a species of drink very common in Africa, owing to the great abundance of honey, while the former is made wherever any farinaceous grain is cultivated.* Rice and honey may be said to constitute the principal basis of the Negroes' sustenance. Honey is commonly procured throughout the whole of Africa in a wild state. The Madingoes, differing from most other tribes, induce the bees to hive at their farms, in order to obtain a supply without the trouble and fatigue of searching the woods. For the accommodation of the bees, the Madingoes use hollowed pieces of bamboo closed at both ends and placed

* Park's Travels, 8vo. p. 248.

horizontally on two forked poles. In one of the ends of the bamboo is a small aperture for the passage of the insects, and when the season for taking the honey arrives, the bees are expelled in the same manner as in Europe. The mead manufactured among many of the tribes is little inferior to that made in our own country. The beer, on the contrary, is not for the most part good, because the process is badly conducted, and the absence of hops renders it heavy and more liable to sour. When Dalzel was at the court of Dahomy, he observed a sort of liquor called *Pitto*, manufactured by the ladies of the palace, of an agreeable flavour and heady quality, which was prepared from maiz or millet regularly fermented. Visitors are always honored with a glass of this beverage, or some other cordial, filled by the king's own hand, which, if refused, gives offence. Favours of this kind are received with avidity by his subjects as a great honour; on such occasions, the individual lies on his back while the king holds the bottle to his mouth, in which posture he must drink till the royal hand be withdrawn, which sometimes does not happen until the whole contents are emptied, especially when he has a mind to sport with the drinker. No subject can drink out of a glass in presence of the king of Dahomy; and although that monarch does not eat in public, he makes no scruple to drink in public. French brandy and other European liquors are plentiful, as well as palm wine; and convivial salutations, in the form of toasts, are common. On one occasion, when the king was going to battle, a warrior, who accompanied him, drank success to his arms, adding, that should he be unfortunate, he hoped he would not survive the disgrace, but perish like the glass out of which he drank, dashing it to pieces as he spoke.—Entertainments are frequently held in the market place of the capital; and it has been known, that 130 of the king's wives have been employed carrying provisions for the accommodation of the parties.—The drinking cups in general use are made of gourds, or calabashes, from which are likewise formed various utensils, such as bottles, jars, and pitchers: some of these gourds are so large as to measure a yard in diameter; they are often converted into washing tubs, or vessels for fermenting the materials of *pitto*. The king of Dahomy, although at the head of a rude and barbarous people, displayed, according to Dalzel, sentiments worthy of a civilized sovereign. In a speech which he made on hearing what had passed in England, on the subject of the slave trade, he used the following remarkable observation:—"What hurts me most," said he, "is, that some of your people have maliciously misrepresented us in books which never die, alleging that we sell our wives and children for the sake of procuring a few kegs of brandy. No, we are shame-

fully belied, and I hope you will contradict, from my mouth, the scandalous falsehoods that have been propagated, and tell posterity that we have been abused. We do, indeed, sell to the white men a part of our prisoners, and we have a right so to do. Are not all prisoners at the disposal of their captors, and are we to blame if we send delinquents to a far country: I have been told you do the same."*

Of another Dahoman sovereign, it is related, that he displayed great ingenuity and cleverness in subduing a powerful neighbouring monarch. Being opposed by a great army, he saw that if he attacked it in an open manner, defeat must ensue; he therefore had recourse to the following stratagem. Affecting to retreat, he placed a large magazine of spirituous liquors under a strong escort, with directions to rest at a neighbouring village. Leaving this in his rere, under the expectation that his enemies would indulge themselves to excess, when finding that his stratagem was successful, he returned on the enemy, and routed them with immense slaughter.

Captain Clapperton found at Wow-Wow, the metropolis of Borghoo, a kind of ale, bearing the name of *Pitto*, obtained from the same grain as that used for a like purpose in Dahomy, and by a process nearly similar to the brewing of beer in England from malt, only that no hops were added, a defect which prevented it keeping for any length of time.†

The people of the countries from the Gambia to the Senegal use palm wine diluted with water, and a kind of beer called *Ballo*.

In the centre of Africa, the same propensity for ardent spirits actuates the followers of the Prophet as strongly as in Turkey. The drinking of palm wine and bouza prevails to a great extent, particularly after the feast of the Ramadan. On the day following, every description of persons, Pagan and Mahometan, forget all distinctions of rank, sex, and age, and are to be seen revelling together in all the wild extravagance of intoxication. In the records of Clapperton's last expedition to Africa, we are assured that inebriety, which was probably unknown to the Aborigines, or, if known, partially indulged in, is now familiar and carried to great excess; and to this may be attributed a great many irregularities committed in that quarter of the globe. All persons, from the king to the beggar, evince an attachment to spirituous liquors. When the king of Badagry, with his attendants, honoured Clapperton with a visit, he drank rum till he forgot what was due to Majesty, and became as convivial as the meanest of

* Dalzel's History of Dahomy, 4to. passim.

† Records of Captain Clapperton's last Expedition to Africa, 2 vols. 8vo. vol. i. p. 133 and 187.

his subjects. Seated with a large umbrella over his head and a British flag, held by white men, floating in the air, his spirits exhilarated by the soul-inspiring draught, and enchanted by the melodious sounds of delicious music, he looked and spoke as if he were the happiest man in existence, while the acclamations of the people, accompanied by snapping of fingers, clapping of hands, singing, hallooing, and dancing, rendered the scene one of more than ordinary bacchanalian cast. The same traveller and his companions were obliged to pay a tribute of rum to the chief of a village near Humba, which, when received, was taken by this personage in mouthfuls, and squirted so adroitly into the gaping jaws of his thirsty attendants, that each aspirant for this mark of distinction, received a portion of the bewitching fluid with peculiar satisfaction. Palm wine forms, in Badagry, an article of commerce, and is as regularly exposed for sale in the markets as any other commodity. At a village called Weza, Clapperton met with a beverage termed *Otèe*, which he describes as a kind of ale made from millet, and of a very enlivening nature. Another sort of ale, styled *gear*, drawn from Indian corn, was found at Ragada, besides a liquor named *bum* of an intoxicating quality.

The practice of drinking bouza, as well as that of another beverage called *Merissah*, prevails to a considerable extent in Sudan or Dar Fur. The Sultan Abdelrahman, in 1795, published an ordinance prohibiting the use of it altogether, under pain of death. Even the unfortunate women who made it had their heads shaved and were exposed to every possible degradation; but as the habit of using it was of older standing than the profession of Islamism, companies are yet known to sit from sun-rise to sun-set, drinking and conversing, till a single man will sometimes carry off with him two gallons of this liquor.* Bouza having a diuretic and diaphoretic tendency, precludes the danger usually attendant on such excesses. In Dar Fur, they have a species of bread called Ginscia, prepared from the small kassob termed *dokn*, (millet.) The grain is coarsely ground, saturated with water, and allowed to undergo a slight fermentation. This mixture is worked into paste called *Kissery*, and, when about to be used, water is added, which renders it a palatable food, slightly acid, and of an inebriating quality, with a narcotic tendency. This preparation is very convenient for travellers, and hence the caravans take care to have a constant supply. Perhaps this is the description of bread mentioned by Lobo, which so intoxicated him, that one of his friends considered it to be the effects of wine. The Lybians of the

* Brown's Travels, 4to. pp. 222, 248, 333.

desert drink beer, brewed at Alexandria, though they frequently use native wine.

The inhabitants of Fezzan are much addicted to drunkenness: their favourite beverage is the fresh juice of the date tree, called *lugibi*, or a drink termed *busa*, which is prepared from dates, and is very intoxicating. When friends assemble in the evening, the ordinary amusement is mere drinking and conviviality. A revenue of some consequence arises from the dates, which, according to Ben Ali, his Fezzanic majesty collects by a tax on the trees and not on the quantity of fruit they produce.*

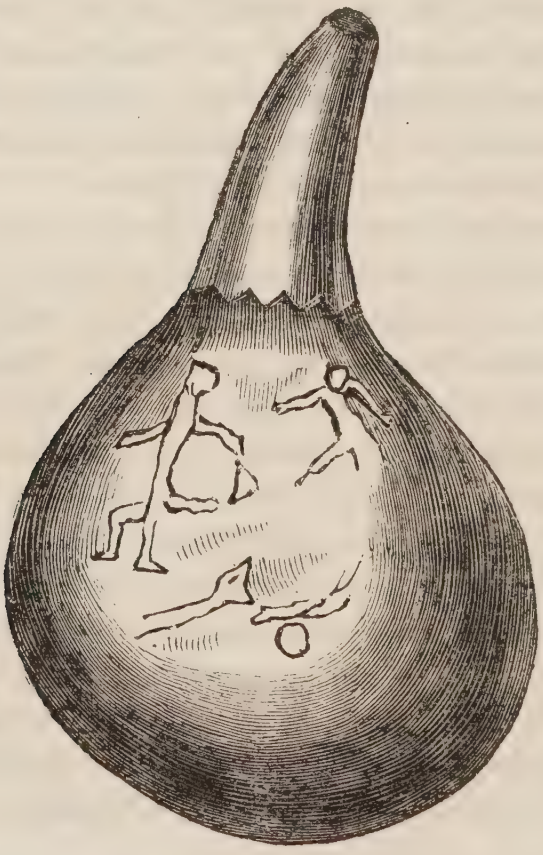
Amidst the beverages which are common among the natives of the interior of Africa, we do not find that any of them appears to be produced by distillation. That art seems to be altogether unknown to them, a circumstance the more surprising as they are acquainted with other inventions more complicated. The working in iron, tanning, and dyeing are familiar to them, in which to such a degree of perfection have they arrived in some places as to rival European ingenuity. The early acquaintance of the Arabs with the tribes of the interior of Africa, might lead one to think that the intercourse would have less or more promulgated their acquirements in chemistry and of consequence in distillation; but we do not find, either from the writings of the learned, or the observations of travellers, that even the slightest traces of such knowledge are perceptible, a proof that distillation was not known or practised by the Arabians at the time of their first connexion with the people of the interior of Africa.

The tribes inhabiting the western coast are equally prone to the pleasures of inebriation as those already described. In Congo, the people cultivate the palm for the love of its juice and shew considerable expertness in the manufacture of the wine, which is obtained as follows:—at certain times of the year they ascend the trees by the help of a hoop, and when they perceive a flower blown they cut it off with a knife, and fasten the point of the cut stalk into a calabash called a *capasso*. It remains suspended in that way for a short time, and on being taken down is found full of a liquor as white as whey. This they ferment, and having racked off, give it the name of *Milaffo*. The whole, however large the quantity, must be consumed in three days, otherwise it would become sour and turn rancid. In this country are to be found eight or nine species of the palm from which wine is drawn of various denominations: 1st, Jamata; 2d, Matoba;

* Horneman's Travels from Cairo to Mourzouk, the capital of Fezzan, 4to.

3d, Coccata; 4th, Congo; 5th, Maccebecco, or Maonger; but of all these sorts the Congo is the best.

In such parts of Congo as do not produce palm wine, a substitute for it is procured from Indian corn or wheat soaked in water, pounded and fermented in the usual way: this is called *Guallo*. In the entertainments of the Congoese, the master of the ceremonies, after having served the company with meat in the most exact manner, holds the moringo, or flask, to the person's mouth that drinks; and when he thinks he has got sufficient, he puts it away, and observes the same practice with all the other guests to the end of the feast; for they, with the exception of the monarch, never use cups or glasses.* Calabashes are the principal drinking vessels used by most of the tribes along the western coast of Africa, and they are extremely useful for all manner of domestic or household purposes. Small ones are employed for holding snuff, or liquids, and they are generally ornamented with figures sometimes cut in high and sometimes in low relief. The annexed drawing is a representation of the *moringo*, or flask, formed of the calabash; and is similar to that attached to the branches of the palm tree to receive the juice or toddy.



* Voyage to Congo, part i. p. 564, apud Churchill.

The Portuguese introduced the vine into Congo, but gave it no encouragement lest it should hurt their home trade, or induce the natives to excessive indulgence, who were already too much prone to intoxication from their native beverages—so much so, that parents have been known to sell a child for a bottle of wine or brandy. Here is a prodigious quantity of honey; not a hollow tree, a cliff of a rock, nor any crevice in which bees have not combs, the wax of which forms an extensive article of commerce, but whether the honey be converted into any kind of beverage is uncertain. A portion of the royal revenue is derived from free-will offerings of palm wine, which not only supply the consumption of the palace, but enable the monarch to regale his soldiers occasionally. He is not, however, wholly dependent on this description of liquor to gratify his appetite, his table being supplied by a variety of foreign wines and other liquors. It is a practice with the Congo monarch to have his wines tasted, lest they should contain some deleterious or poisonous principle. His cups and vessels are made of silver, gold, or other materials, consecrated solely to his own use, as he always eats and drinks by himself, his nobles and courtiers all the while standing. At marriage ceremonies amongst the Congoese, the banquets are costly, the guests seldom come to the feasts but with whetted appetites, and they never retire till all the victuals and liquors are consumed, which, on some occasions, occupies two or three days.

In Angola, palm trees grow in great variety and perfection. The oil palm *(Elæis Guineensis)* is common to this country with all Western Africa, and its wine is exceedingly pleasant and refreshing; but the natives on the coast prefer the European liquors introduced by the Portuguese and Dutch traders and settlers. At marriages and funerals, there is a great consumption of native as well as foreign beverages. At an interment, the blood of the victims offered to the manes of the deceased, together with palm wine, is plentifully poured over the vault or grave in which the body is deposited, while quantities of wine are consumed by the mourners.

The drinks common to Congo and Angola are familiar in Loango. The people worship a male idol, called Marambas; it is carried before the chief ruler wherever he goes, to which, whenever he eats or drinks, the first bit or first cup of wine is offered. They have also a female idol, named *Gomberi*, whose festivals are celebrated by music and excessive drinking; the priestess on this occasion so modulates her voice, as to make the worshippers believe that it is the statue that speaks. The practices of the king are equally singular; he has two halls in his palace, one for eating, another for drinking in, and it is

criminal to look at him while he is at either, in consequence of which he is shut up during that time, his nobles waiting in an ante-chamber. As soon as dinner is finished, he retires to his drinking hall, one of the grandest apartments in the place, accompanied by his nobles. It is hung round with costly tapestry, and at one end stands the throne made of fine palmetto pillars, white and black, curiously wrought, and interwoven in the manner of basket work. Behind a screen in the front of the hall, is kept the palm wine from the view of the attendants. On each side of the monarch stand two cup-bearers, one of whom hands him the cup when he signs for it, and the other strikes two iron rods, not unlike drumsticks, to give notice that he is about to drink, upon which all the nobles fall on their faces, and the cup-bearer, after presenting him with the wine, turns his back, in which position they all remain till notice is given that the monarch has done drinking, when they rise quickly and clap their hands in approbation. When any one is permitted to drink in the presence of the monarch, he turns his back to him, through respect, and no one is ever allowed to drink out of the same cup with him. In the neighbouring state of Ardrah, these observances are kept up with great precision, and every violation of them is punished with the utmost rigour. Of this there is a melancholy instance of a child that, having fallen asleep by the king's side, and awaking at the striking of the two rods, unconsciously cast its eyes on his majesty while he was drinking, for which the child was immolated on the spot, and the blood of the innocent was sprinkled over his majesty, lest any harm should befal him. Various ceremonies connected with the superstitions of their religion give occasion to revelry and irregularity. When their idols are consulted, it is usual for the priest to obtain a butt of beer, as his reward for the delivery of the oracles, and then to give a bumper in honour of the idol, while he and his attendants seldom separate till all the liquor is consumed.

At the funerals of their kings, great quantities of palm wine are consumed, not only in offerings, but in regaling the mourners admitted within the palisade of elephants' teeth by which the monarchs' graves are surrounded. Palm wine is a useful article in the manufacture of their cloth, which is made from the young shoots or leaves of the palm, by soaking and softening them in the wine, and afterwards rubbing them with the hand until they become so pliant, that they can manufacture them into a comfortable article of clothing, of various dyes and qualities. From the *Metamba* tree a pleasant wine is obtained, little inferior to that of the palm, while its leaves are so large as to afford a complete shelter from excessive heat and heavy rains. The *Alicondi*, a tree of large dimensions, is sometimes hollow, containing a large

quantity of water, which often yields to the inhabitants a grateful supply when other sources fail. The shell of the fruit serves for holding wine, oil, and other liquors, and is usually ornamented with carved devices and grotesque figures. From the branches of these trees are suspended hollow pieces of timber, that the bees, which are numerous in the country, may resort to them, and there deposit their treasures.

With the Giagas, or mountaineers of Congo, the palm wine is a favourite drink, and none of their festivities are without it. When the king goes abroad, it is customary for his wives to carry his drinking utensils, and when he takes a draught, they kneel, clap hands, and sing :—at funeral rites, they sprinkle palm wine over the grave, and, among the rich, libations of this liquor are offered for several days successively.

The inhabitants of Cacongo, a small kingdom adjoining Loango, prepare a wine called *Embeth*, an extract from the palm tree, as well as another agreeable beverage from the juice of plums.*

In the island of Annabon, in the gulf of Guinea, the rivulets are covered with palms, from which the inhabitants draw, by incision, quantities of palm wine. In the island of St. Thomas, the sugar-cane once flourished to such perfection, that seven ships were annually freighted with sugar for Portugal, two for Madeira and the Canaries and one for England. In 1645, there were in this island upwards of 54 sugar mills in constant employment, each furnishing annually six or seven hundred loads of coarse sugar, or rather of the unprepared juice; the whole computed to amount to forty ship loads. Since the sugar plantations in the West Indies have become so extensive, the trade of St. Thomas has fallen off. Wines have been made in this island from the produce of the native vine, but not to any great extent.

The kingdom of Benin has, in common with the other parts of Africa, an abundance of palm wine, which is daily exposed for sale in the streets and places of public resort. There are also two other sorts of wine, one called *Pali*, and the other *Pardon* or *Bordon*, drawn from a tree of the same name; the former is drunk in the morning, and the latter in the evening. At marriage festivals and funerals, there is a great consumption of these wines, as also at the circumcision of children. On the last occasion, quantities of these wines, with provisions, are placed in the avenues or entrances to the house of entertainment, in order to appease the evil spirit, and to prevent its doing the child any injury. On the demise of a monarch, a splendid banquet is

* Damberger's Travels.

given, and on his tomb the most delicate wines and dainties, that can be procured, are placed, in order to regale the mourners and visitants. When they become intoxicated, they rush into the street, kill all they meet without distinction, and throw the heads of those they have slaughtered into the sepulchre, as a peace offering that the flight of the monarch to eternity may not be solitary. The anniversary of the great coral feast is productive of much irregularity. On this day the monarch makes his grandest appearance, and distributes immense quantities of wine and provisions, while the day ends in riot and drunkenness.

Along the slave coast, *Pitto*, a refreshing beer, with palm wine and most European liquors, is in consumption; while pitchers and vessels made of gourds finely ornamented, are in common use for holding these liquors.

In Whidah an excellent beer is made from two sorts of maize, one of a large and another of a smaller description. In the art of brewing the women are so well skilled, that they are said to make beer not inferior to any in Europe. Their skill, in this respect, is attributed to the danger of drinking the water of the country, and hence even the slaves drink nothing but beer.

On the Gold Coast, the Dutch and Portuguese early established settlements, and introduced European liquors. Of their native drinks there is nothing differing from those of the states already mentioned. Palm wine is an article of great trade, and is sold extensively through the country. In the public markets the palm wine merchants commence sale at noon, and there is scarcely any other commodity which has so quick a sale. In the evening, droves of men and women may be found singing and dancing with great happiness. When the palm wine is brought into the market place, it is usual amongst the negroes for kings, masters, and slaves, to sit down promiscuously and drink together, without distinction of rank or station, in the most familiar manner and with increasing good humour; they delight in full bumpers, and he who takes a pint at a draught is accounted a clever fellow.

Of the palm wine used along the Gold Coast, there are four species. 1. That made from the palm tree properly so called, which is drawn off by incision, after lopping away the branches, when the tree is full grown. For this purpose a hole is bored in the thickest part of the trunk, into which a small pipe or reed is introduced; the sap continues running for nearly a month, and when the tree is apparently exhausted, a fire is kindled at the bottom to force out the whole juice. 2. That called *Quaker*, which is drawn from a sort of dwarf palm, exceeds the other, not only in delicacy of flavour, but in strength.

3. *Pardon*, the produce of a peculiar species of palm, which is very palatable, but weak in quality. 4. The *Kriska*, or *Crissia*, a wine of no great strength, but which is said to beget a voracious appetite, a constant desire for eating, and an extraordinary love for sensual gratifications.*

At Sierra Leone, although sugar is cultivated, no rum is manufactured, so far as I can learn; but amongst the Negroes a drink is made from the manioc (*jatropha manihot*,) a plant of great importance not only in this quarter, but in most parts of the West Indies and in South America, as noticed in the articles relating to those countries. Bread, of a very palatable and nutritive kind, is made from the farina or meal procured from the roots of the manioc, which constitutes the principal food of the lower classes of the natives.

The oil of the palm trees is used as a substitute for butter, and is also employed with the alkaline lixivium of the plantain or banana tree, for making soap, and, by incision in the trunk, a liquor is drawn from the tree like wine, but, from its proneness to the acetous fermentation, it becomes useless in three or four days. Were it distilled, it might afford an excellent spirit, and come much cheaper than what is imported by European settlers. As the method of procuring the liquor of the palm is different here from that practised elsewhere, a short description may be necessary. The trunk of the tree being too rough to permit a person to ascend by the hands and feet alone, an elliptical hoop of bamboo, open at one side, is made to pass round both the body of the climber and the tree, and then knotted. With the hands on each side of the hoop, and the feet pressing against the stem of the tree he raises himself by a spring, shifting the hoop behind his back each time, and then advancing a step with his feet; and in this manner gains the desired height, when with no other support but his back to the hoop, and his feet firmly applied to the trunk, he makes a hole with an augur about half an inch deep below the crown of the tree, into which he inserts a leaf in the form of a tube through which the liquor runs into a calabash provided for the purpose, and capable of holding several quarts. The liquor flows more freely during the night than in the heat of the day. About half a gallon may be procured for the space of a month from a single tree each day, without any injury to it, for several years. But if the drain of the juice continue longer than a month, the tree either dies or requires a very long respite till it recovers. After the wine has been drawn off, the auger-hole is secured with some clay to prevent insects from leaving their eggs in it, the larvæ of which would eventually ruin the tree.†

* Bosman's Description of Guinea, p. 286.

† Winterbottom's Account of Sierra Leone, 2 vols. 8vo.

There are three species of the palm in this region yielding wine. The first, the sweet kind, is afforded by that named Maba, and the second by the Mosombie, the third from the Masongoi of a superior quality. The sweet wine, when properly fermented, produces a very agreeable beverage. An inebriating drink is also produced from maize, called *baamboo*. From a species of cream fruit found in the settlement of Sierra Leone, the natives draw a pleasant saccharine fluid to quench thirst; this, when fermented, quickly intoxicates. Here also is a plant called the *water-vine*, (Tetracera potatoria) the stems of which are a sort of vegetable fountain, discharging, when cut across, a cool, limpid, and refreshing fluid. In the centre of each town, in this settlement, stands a building erected on wooden pillars, and called by the natives a *kaldè*, or conversation hall. The doors of it always stand open for the free ingress and egress of visitors, and here no one can be at a loss for palm wine and cheerful company. The *kaldè* is something similar to a coffee-room in Great Britain.

The vine was introduced by the Portuguese into this colony, the plants were brought from Candia, and they are said to yield grapes in some parts twice in the year, yet, no wine has been made, owing perhaps to the fear of injuring the home manufacture.

Among the various vegetable productions of Africa, there is none more remarkable than the *Boabab*, or *Goui*, called also Adansonia digitata, from its discoverer, a tree of such stupendous magnitude, that it measures, according to Adanson, from 65 to 78 feet in circumference, every branch being equal to a moderate tree. When in full foliage, it is a forest in miniature; stripped of its leaves it is like an immense wooden tower. The fruit, resembling a gourd, is made into drinking bowls and vessels for various purposes; the bark furnishes a coarse thread, which is converted into ropes and cloth:—the small leaves afford food in times of scarcity, and are commonly employed as leaven for bread, and to ferment beer brewed from millet, while the larger leaves serve as coverings to the huts; when burned, their ashes form an ingredient in the composition of soap:—bees hive in the hollows of the trunk—the pelican constructs its nest between its massive branches—monkies betake themselves to it for shelter and subsistence, hence the name of boabab or monkies' bread—while the wandering negro finds refuge from the storm in its time-worn cavities. The leaves of this tree, dried and reduced to powder, constitute *Lalo* which the Africans mix with their food, to diminish the excessive perspiration to which they are subject, and Europeans find it serviceable in diarrhœa and other maladies incidental to the climate. The pulp of the fruit is slightly acid, and so agreeable, that it is frequently eaten;

while the juice expressed from it, when mixed with sugar, constitutes a refreshing drink possessing many virtues, and is much valued as a specific in pestilential fevers—fermented, it inebriates, and when analyzed, the pulp is found to be composed of a gum resembling gum Senegal, a sugary matter, starch, and a substance which appears to be the malic acid.*—This tree, which is chiefly found in Senegal, is, in the opinion of Humboldt, "the oldest organic monument of our planet." Some of them are supposed to have stood 5000 years. The natives hollow its huge trunk into chambers, in which they deposit the bodies of malefactors, or persons to whom the rites of sepulture are denied: here the bodies become dried up, the tree acting as an antiseptic, and preserving them like mummies.

With the boabab may be associated the Cobai,† a tree little inferior in magnitude, the fruit of which, about the size of a hazel-nut, is reckoned so delicious, that the inhabitants require no other food when it can be procured; and their ingenuity has succeeded in making it subservient to the purposes of drink.

The people of Gabon, Calbongas, Biafra, and Ashantee, are all skilled in the making of intoxicating beverages. Bowdich, who visited the latter country in 1817, found its inhabitants well supplied with palm wine, of which they are very fond. One of the lords of the council, named Oudmata, on one occasion, seemed quite astonished at an English gentleman drinking only half a bumper, and remarked that he would drink three pots, about fifteen gallons, before he went to bed.‡

Among the privations that superstition imposes on them, one day of the week is considered *fetish* or sacred, on which they are exempted from labour, and deprived of their favourite beverage.

It forms a portion of the traffic for slaves in Ashantee to present the king and his ministers with different kinds of liquors, the better to secure his favour, and at an entertainment given by that monarch to Bowdich's mission, they had port, Madeira, spirits, and Dutch cordials, with wine glasses. Healths were frequently drunk, such as—"The king of Ashantee"—"The king of England"—"The Governor"—"The king's captains"—"A perpetual union"—"The handsome women of England and Ashantee."

Rum is a favourite liquor, both with the king and people; it is poured out along with palm wine, as a peace offering, to the manes of the dead; and in the national processions and celebration of religious

* Hooker's Botan. Magaz.

† Mollien's Travels to the Sources of the Senegal and Gambia in 1818, 8vo.

‡ Bowdich's Ashantee, p. 386.

rites, the king's cook is obliged to bear, amongst other utensils, silver punch bowls, waiters, and tankards, to accommodate the monarch and his attendants; while in sacrifices for deceased relatives, quantities of those liquors are consumed in drinking and sprinkling their graves.

Before the committal of desperate acts, the Ashantees drink largely of rum, to inspire courage. One of their monarchs, being unsuccessful in war, knew that he must eventually lose his head; and to prevent such disgrace, he summoned his ministers in order that he might sacrifice his life for the quiet of his people. They insisted on sharing his fate, and a barrel of gunpowder being brought for each to sit on, they drank to excess, and blew themselves up, at the same moment, with fire from their pipes.

In paying interest on money, it is accompanied with what is called a *dash* of liquor; and a portion of the penalties for an intrigue is a pot of palm wine, or *pitto*, which is here accounted as good and pleasant as some of our brisk ales; it is made from dried corn. It is customary, when they drink, to spill a little of the liquor on the ground, as an offering to the *fetish*, somewhat similar to the practice of the ancient Greeks, as referred to in Homer's Odyssey. In drinking palm wine it is deemed a luxury to suffer the liquor to run over the beard, and many pride themselves on the adroitness with which they can draw this ornament of the chin through the fingers while wet.—The drops are usually caught by a boy with a bowl, which he holds kneeling, and these precious tricklings are swallowed with pleasurable avidity. Feasts are generally held in the market place, and it is almost a daily ceremony with the king to drink there in state, seated in an elevated chair. On immolating victims for success in war, he holds a silver goblet of palm wine in his hand, and when the head of a subject is cut off, rising on tip-toe, he imitates a dancing motion, as he drinks with joy, inspired by expectations of conquest. A man of consequence, in private circles, never drinks before his inferiors without hiding his face from them, believing that at this moment only his enemies have the power of imposing a spell on his faculties in spite of his *fetish* guardian. It is considered, whether at a public or private meeting, a proof of superior strength in those who can drink most without being overcome. After marriage, it is usual for the bridegroom to present the bride's family with a flask of rum, the day following the nuptials; and as it is presented full or partly so, it indicates either her purity or frailty before the marriage. In visiting, the chief gives his principal slave a few sips of the liquor offered to himself, not as a matter of precaution against poison, as in Abyssinia, but as a testimony of regard.

Bosman, when he visited the coast of Guinea, found the inhabitants willing to barter every thing for brandy. If any of them happened to get a mouthful more than another, they began to fight without respect to king, prince, or priest. Some joined in the scuffle through envy, and lest they might be accused of being idle spectators. It is said of one of the chiefs of Bamba, that he refused the crown in order to be near the Portuguese, that through their means he might the more readily indulge in wine and brandy.* The Negro women of the Slave Coast brew an excellent description of beer from *milhio*, a species of millet or maize. Water, being drawn from wells of from twenty to thirty fathoms in depth, is so cold as to render the drinking of it dangerous: hence beer is in great consumption, being one of the safest beverages to allay thirst in that very warm climate.

Rene Caillé, one of the latest travellers in Africa,† has not added much to our information respecting that almost unknown quarter of the globe. He states, that he found palm wine in use, and, near the settlement of St. Louis, he observed that from a fruit called *caura*, a sort of plum, an agreeable beverage was made, which much resembled cider: this fruit, when bruised and fermented with water, produced a liquor highly intoxicating. He mentions another liquor termed *jin-jin-di*, made from the root of a plant of that name. This root is first burned and then pounded with the bark of a certain tree, after which it is immersed in water and kept constantly stirring for about the space of two hours. It is then left for a few days to ferment, after which it is drawn off and becomes a drink of a sweet and pleasant flavour. The Kooranko, a people living to the East of Sierra Leone, make an exhilarating, effervescing drink, called *singin*, which they extract from a root of the same name. Among the Bagos, an enterprising tribe, palm wine is plentiful, and as early matrimonial contracts are made there, it is a curious regulation, that as soon as an engagement of this kind is entered into, the parties are compelled to live in the same house, and are brought up together with the knowledge that they are designed for each other. From that time, when they are generally about seven or eight years of age, the male is enjoined to bring each day to the relations of his intended partner, two calabashes of palm wine, one in the morning, and another in the evening. His parents supply him with this, until he is himself capable of making the wine. Major Laing, speaking of another tribe,‡ says, that the courtship does not employ much time; for if a man form an attachment

* Bosman's description of Guinea, 8vo. p. 403. Adanson's Voyage to Senegal.

† Travels through Central Africa to Timbuctoo, &c. 1824, 1828, 2 vols. 8vo.

‡ Laing's Travels in Western Africa, 8vo. p. 83.

for a female, he never considers whether the feeling is reciprocal, but immediately carries to her parents a jar of palm wine, and declares to them the object of his visit. Should his suit be approved of, he is invited to return, when a second jar of wine, with some other trifling present, terminates the courtship. A tribe called the Timannus, in the vicinity of Sierra Leone, not only employ palm wine in this manner, but use it as offerings to the dead ; for which purpose they deposit not only quantities of this liquor, but of provisions in the charnel houses, particularly of their kings and chiefs, under the impression that they are necessary for the deceased, and consumed by them as a support for their spiritual existence ; thus shewing a belief in the immortality of the soul. It is a prevailing practice, among many of the pagan nations of Africa, to consign a portion of both food and drink to the dead, associating the pleasures of the temporal with the Spiritual world. Their attachment to palm wine is so strong, that many are so relaxed by its effects, that they become afflicted with diseases not unlike those produced by *ava*, in the Sandwich islands.

The Caffres and Tambookies prepare an intoxicating drink from millet, or Guinea corn, which they call *pombie*. It is manufactured much in the same way as the liquors already described, and in large quantities ; for the longer it remains so as to become tart or sour, the better they reckon it and the more eagerly do they covet it, as possessing great virtues.*

In Morocco, the Jews are extremely active in preparing intoxicating liquors, and making wines both white and red ; and in the province of Suse and Tetuan, they not only make wine, which, in Windhus's opinion, is equal to the sherry of Spain,† but distill brandy from the refuse of the grape as well as from raisins.‡ An ardent spirit is also extracted from figs called *mahayah*, which they drink almost immediately from the alembic. When it is kept for a year or two, it resembles Irish whiskey, and is preferred to European brandy or rum, because, as they pretend, it does not heat the blood. A glass of it is generally taken before meals: cider is made in many parts of Barbary, and affords an excellent drink. *Usuph* is common, but consists of little more than the water in which raisins have been steeped. Sir Capel De Brooke, when in Morocco, found that the Moors were not scrupulous in drinking wine, which they take after boiling, that process, in their opinion, removing the objection made in the Koran, as it is the simple fermented juice of the grape which is forbidden : in this

* Joano Dos Santos' Hist. Patterson's Travels in Caffraria, 4to.p. 92.

† Journey to Mequinez.

‡ Jackson's Account of Morocco, 4to. p. 18.

state its taste and appearance resemble sour mead. Lempriere asserts, that there are very few of the inhabitants who do not joyfully embrace every private opportunity of drinking wine and spirits to excess. Several of their monarchs were guilty of great extravagancies in their drunkenness. Abdelmelech was odious to his subjects on this account, and was guilty of the greatest cruelties while under its influence. Another emperor, in an intemperate moment, caused the teeth of a favorite mistress to be drawn out ; and to atone for his barbarity, he ordered the dentist to be served in the same manner, whose teeth he sent her by way of consolation. Muley Dehaby destroyed his constitution and shortened his reign through an obstinate dropsy, occasioned by an inordinate devotion to wine.

The materials for which, and the proportion of brandy drawn from those materials, as practised by the Jews in their manufacture of that spirit, are—

From 150lbs. of pears, which, when in season, cost about ten pence, they make about two gallons.

From 150lbs. of raisins, which cost about ten pence, from eight and a half to nine gallons are extracted.

From 150lbs. of figs, which cost about sixpence, they make about eight gallons.

From 150lbs. of dates, costing from twenty-five to twenty-eight pence, about seven gallons are obtained.

The brandy from dates is considered the best, and is sold for 3s. 6d. per gallon.

The brandy from raisins and figs sells for about 2s. 6d. per gallon.

The brandy from pears brings about 3s. 6d. per gallon.

From 150lbs. of grapes, about eight gallons of very tolerable wine are obtained, and four gallons of brandy.

Were the Jews more careful in the selection of their grapes, and the making of wine, it is considered it would be of good quality. In August, the wine is made, and the process of boiling is usually conducted in the open streets. The white grapes are simply pressed under foot and then boiled ; the black grapes, or their refuse, undergo the process of distillation. The brandy is of a white or clear colour, and is generally flavoured with aniseed of which the Jews are very fond : a glass is usually taken the first thing before breakfast, and is considered very wholesome. To the taking of spirits is attributed the freedom of the Jews from the *elephantiasis*, or swelling of the legs, a disease quite common amongst the Mahometans. Both Moors and Jews make very good sweet-meats from the orange flower, which the rich boil in clarified sugar, and the poorer classes in honey : orange

peel is also made into a preserve with sugar and honey ; the sugared almond cakes are very good. In Morocco, the oath of a principal *alkaid*, or *Talib*, is equal to the oaths of six common persons,* but there are different offences, of which if he be proved guilty, detract from the validity of his oaths ; amongst these offences are those of drinking wine, smoking, &c.

The people of Tripoli make an excellent wine from the Lotus tree, *(zizyphus lotus)* the fruit of which is considered superior to that of the date : from this tree, it is alleged, that the ancient Egyptians took the name of lotophagi. The lotus of the ancients appears to be the same plant as the *seedra* of the Arabs. It is very common in the Jereede and other parts of Barbary ; it has the leaves, prickles, flowers, and fruit of the *zizyphus*, or *jujeb*. The fruit is luscious and in great repute ; it tastes something like gingerbread, and is sold in the markets through all the southern districts of these kingdoms.† The Lybian, or Rhamnus lotus of Linnæus, is a shrub of about four or five feet high, bearing berries which are very nutritive, and used in various ways as food. Whether this be the same as the lotus mentioned by Xenophon, in his address to the Ten Thousand, cannot be determined.‡ Pliny alludes to it, as furnishing subsistence to the Roman army, when passing through a portion of Africa.§ Mungo Park notices the Rhamnus lotus, the berries of which are, by some of the negro nations, termed *Tomberongs*, and converted into bread by pounding them in a mortar till the farina is separated from the stones. This farina, or meal, is then mixed with water, formed into cakes, and dried in the sun. The stones are put into a vessel of water, and well shaken to separate the remaining particles of meal, which communicate an agreeable taste to the water, and being mixed with a little pounded millet form a pleasant gruel, called *fondi*, the common breakfast in many parts of Ludamar.‖ In other places they ferment it, and thus make an excellent beverage from it.

The Jews at Taffilet use beer of their own brewing, but, in the vintage season, make a little wine. Palm trees are very abundant in Tripoli, and the inhabitants draw from them, by incision, a frothy liquor termed *laghibi*, which, when drunk immediately after being taken from the tree, is very palatable. It is also fermented, and produces a strong inebriating wine in great request among the people, notwithstanding the prohibitions of the Koran. The laghibi is obtained from the annual buds at the top of the tree, and the juice flowing from the

* Sir Capel De Brooke's Sketches of Spain and Morocco, vol. i. p. 145.

† Shaw's Travels. ‡ Anab. lib. iii.

§ Pliny, lib. v. c. 4 ; lib. xiii. c. 17, 18. ‖ Park's Travels.

wounds is collected in vessels. Trees, having undergone this operation, bear no fruit during the next three years ; but, according to Paolo Della Cella, that which is then produced is of a more delicious kind.— In some parts are excellent grapes, but no wine is made from them owing to the indolence and ignorance of the people.* Wine and liquor shops, as well as some taverns are kept by the Mahometans of Tripoli, who, regardless of the prohibition by the law, drink wine without any restraint or limitation : so great is the consumption, that it is said to produce a revenue of one hundred thousand francs annually.† In the mausoleums have been found various sorts of drinking vessels : a proof that the early inhabitants were familiar with wine and and other seductive liquors.

The Deys of Algiers, though possessing one of the most fertile States in Barbary, do not encourage the manufacture of inebriating liquors ; yet Jamaica rum, as well as good wine, is among the merchandise always in demand. Grapes of a superior quality grow in Algiers ; and, according to Shaw, some wine is made not inferior to the best Hermitage, both in taste and flavour ; but the locusts are so destructive, that they frequently annihilate whole vineyards. Since the conquest of Algiers by the French, in 1831, it is to be presumed that their ingenuity has not been slow in bringing to bear the resources of that country to supply the wants of the army with such liquors as the native fruits afford. In Tunis, the taverns are kept by slaves, who have considerable authority, which they sometimes exercise with good effect ; for if any one get drunk or behave irregularly, they have the power of chastising him at the instant ; by which means taverns and public-houses are protected from broils and disturbances. White wine made in the country is the common beverage, which is cheap and of good quality, but, in order to render it more inebriating, it is mixed with quick-lime.

In Barca, great quantities of a liquor made from the date tree are consumed, and which is called *date tree water :* it inebriates when taken to any excess. This country is remarkable for the superior flavour of its dates, which are in such abundance, that they are frequently used in feeding cattle.

Along the Barbary coast, as well as in the Levant, sherbet is the common drink. The term sherbet is applied generally to every beverage consisting of water holding, in solution, a sweet and an acid ; and is preferable to lemonade in its extended acceptation. In Algiers

* Narrative of an Expedition from Tripoli to the Western Frontiers of Egypt, in 1817, 8vo. London, 1822, p. 16.

† Travels of Ali Bey, vol. i. p. 238.

it is made of sugar, juice of lemons, apricots, plums, violets, or other fruits. Mead also abounds, honey being gathered in large quantities, not only in the Barbary States, but, as already observed, through almost every part of Africa. The wealth of many of the tribes, it is well known, consists in nothing but honey and wax. The modes of rearing bees are various ; the hives are generally shaped like ours, but more of a cylindrical form, and placed lengthwise, and are commonly suspended from the branches of trees: the entrance is at the bottom which is furnished with straw. This, however, is only the case where the bees are domesticated ; but wild honey is procured from the forests in large quantities. Flowers being very scanty in many States, the bees collect the honey from trees, shrubs, and even underwood : hence African honey, in general, is coarse and insipid to European palates, and is full of particles of leaves that give it a blackish appear ance ; some ingenious natives clarify it, and render it beautiful, rich, and agreeable. The art of making brandy from fermented honey is said to be practised by some of the native tribes, a use to which it has never yet been applied in Europe. Molien, in his Travels, informs us that the Poulas make brandy from honey after being fermented in the usual manner. The sugar obtained from honey is of two sorts, one resembling that of the grape and the other like the granulated produce of the sugar-cane. In some of the interior districts, a kind of beer, called *Ballo*, is made from rice or millet.

I shall conclude this circuit of Africa, by observing, that the knowledge of its most enlightened inhabitants in chemistry is not more solid than their pretended acquirements in alchymy; since the boasted discoveries of the Saracens are to them wholly lost :—even in the most simple medicinal prescriptions, the Moors, from whom great information might be expected, display the grossest ignorance. So limited is their education, that the only book in use among them is the Koran with its commentaries, to which may be added a few blundering tracts on geography, with some historical memoirs—for such branches of history, as are older than the Mahometan era, are a medley of romance and confusion. Thus circumstanced, even did their laws permit, they could not manage any experiment in chemistry, much less the process of distillation : to the Jews and Christians residing among them, they are indebted altogether for the products of the alembic.

In the Persian empire, as well as in the Turkish, the Mahometan faith precludes indulgence in inebriating liquors; but in few countries, perhaps, is there less attention paid to the prohibitory mandate of the prophet. Sherbet is the fashionable drink at meals, but wine is the favourite in private. The love of the Persians for this liquor is well

known from the earliest antiquity; and it often led them into the most extravagant excesses. Herodotus tells us, that they were accustomed to debate on matters of the highest moment when heated with wine;* and Strabo, says their counsels and decrees were firmer, if made at that time, than when sober.† It was a familiar phrase among them, that "there was equal sin in a glass as in a flaggon." So impressed are they with the idea that the sole pleasure of wine is in its intoxicating effects, that they think Christians are all drunkards; and say, that since it is a privilege of our religion to drink wine, it is neither attended with shame, nor disgrace. Hence many of the blunders or singularities of Europeans are often attributed by the Persians to drunkenness. The following anecdote is a familiar illustration. An English officer, riding on one of their most spirited horses, had great difficulty to keep his seat, and presented so awkward a display of horsemanship, that he was laughed at by the spectators. A Persian friend who was witness to the scene, in order to save the credit of the Englishman, exclaimed, "Oh! he rides admirably, and as becomes one of a nation of soldiers; but he is drunk, and that accounts for his not keeping his seat as he otherwise would." This had the desired effect, and saved the officer from further observation. Hafiz, the elegant and favourite poet of the Persians, though he may have indulged his imagination to the extreme of fiction, has strongly marked, in the following verses, his attachment to the popular beverage of his country:

"I am," says he, "neither a judge, nor a priest, nor a censor, nor a lawyer; why should I forbid the use of wine?

"Do not be vexed at the trifles of the world; drink, for it is a folly for a wise man to be afflicted.

"That poignant liquor, which the zealot calls the mother of sins, is pleasanter and sweeter to me, than the kisses of a maiden."

"The only friends who are free from care, are a goblet of wine and a book of odes.

"The tulip is acquainted with the faithlessness of the world; for, from the time that it blows till it dies, it holds the cup in its hand.

"Give me wine! wine that shall subdue the strongest; that I may for a time forget the cares and troubles of the world.‡

"The roses have come, nor can any thing afford so much pleasure, as a goblet of wine.

"The enjoyments of life are vain; bring wine, for the trappings of the world are perishable."

* Herod. vol. i. s. 133, p. 137. † Strabo, Geo. chap. 15.

‡ Johnson called brandy, "*drink for heroes.*" Hafiz distinguishes his liquor by an uncommon epithet, "*the leveller of men.*"

This flowery imagery of Hafiz, so descriptive of man's attachment to wine, brings to my recollection an epitaph on the tomb of a wine-bibber. " Wine gives life ! it was death to me. I never beheld the morning sun with sober eyes ; even my bones are thirsty. Stranger ! sprinkle my grave with wine ; empty the cup and depart."

Travellers assure us, that intoxication is common in Persia, and that the laws of moderation are frequently as little regarded as those of religion. It is related of a certain Khan of that country, that he was so fond of spirituous liquors, that the king had often reproved and even chastised him for it ; but finding those measures of no effect, his Majesty ordered him to continue drinking, which order he so faithfully fulfilled, that he was intoxicated during forty days, and, in consequence became so disgusted with the practice, that he gave it up altogether, and solicited the king to revoke his command.*

At an entertainment, at which Mr. Morier was present, he describes very minutely the various articles served up to the guests.— Amongst these were trays, with fine china bowls filled with sherbets, some of which contained sweet liquors, and others a most exquisite kind of lemonade ; besides, small cups with delicious liqueurs. While in vases of sherbet were spoons made of pear-tree, with deep bowls, and made so fine that the long handle gently vibrated, when carried to the lips, as if to tantalize the desire of the guest. Wine formed no part of the banquet, for the prohibition of the Prophet was religiously observed by the entertainer, who was a rigid Mussulman, and an exception to the generality of his countrymen.

The Jews and Armenian Christians are, in Persia, the principal manufacturers of wine, and though there is scarcely a province in the empire which does not afford it, yet the wine of some is much more esteemed than that of others. Shiraz is universally allowed to produce the best. Tavernier states, that 4,125 tuns of this wine were annually made in his time.† It has so strong a body, that it will keep from eighty to one hundred years without diminution of colour or flavour. To eat the bread of Yezd, and drink the wine of Shiraz, is, proverbially in Persia, to be happy. The name of Shiraz, or Sheraz, is said to be derived from Sherab, which, in the Persian language, signifies a grape, because that fruit abounds in this place and its vicinity, where the finest orchards and vineyards in that empire are found. Among the grapes most esteemed for wine, the *Reesh Baba*, which is without seed, is luscious and agreeable to the taste : the

* Kotzebue's Travels, p. 207.

† Tavernier, p. 421. Waring's Tour to Shiraz.

Askeri, also wanting seed, is as sweet as sugar; the black fruit of this species produces the celebrated Shiraz wine ; and the Sahibi, the bunches of which weigh from seven to eight pounds, is a red grape of a sharp rough taste that yields a good wine, but is chiefly employed for making vinegar. The *Kishmish* is a small grape, and, like the *Askeri*, without any stone ; in the opinion of Olivier, it is preferable to all others, not only for eating, but for wine. The *anguur asji*, from which is manufactured the rich red wine so nearly resembling Hermitage, is in high estimation.

At Shiraz, Ispahan, Casbin, Teheran, and other places, the vineyards are numerous, and planted in the most advantageous situations, both with respect to soil and exposure to the sun's genial influence.

In making wine in Persia, the fruit is trodden in a vat, or cistern formed of mason work, plastered with a material or stucco like Roman cement. From this the juice is collected into an under vessel, or receiver, from which it is conveyed into immense jars, containing nearly 100 gallons, to undergo the process of fermentation. In these it is left about three weeks, during which it is stirred daily by a person appointed for the purpose. The wine is afterwards strained and put into other vessels, in which it remains nearly five weeks, and undergoes another slight fermentation ; after this it is considered fit for use. The brandy made from the lees and weaker sort of wine, is ardent, harsh, and unpalatable, when compared with that made in France ; but what is drawn from the better description of wine is of excellent quality. Were the same measures pursued in Persia in the manufacture of wine as those observed in Europe, there is no doubt that the produce of that country, already so celebrated, would far excel that of any part of the world.

Both brandy and wine are put up in thin flasks or bottles, and packed in chests, to the amount of about twelve English gallons each, for transmission through the empire and to different parts of the east. The character of the Ispahan wine is not less estimable than that of Shiraz ; it is stronger, and is as clear and transparent as glass, owing to the white grape from which it is made. The red wine of Teheran is preferable to that of Casbin, where it is manufactured in considerable quantities. There the vine is not supported by props, the stem or trunk, rising to the height of five or six feet, is sufficiently strong to support the fruit. The Casbin wine is represented as having a disagreeable and bitter flavour, supposed to be occasioned by permitting the stone of the grape to remain in it to the injury of the fermentation and the saccharine properties of the liquor. According to Sir John Chardin, the finest grape in Persia is that at Casbin called

Shaboni, or the royal grape: itis of a transparent gold colour, and is said to produce the strongest and most luscious wine in the world. Some of the grapes in this quarter, as well as in other portions of the empire, are so large, that a single bunch is nearly the size of a man's body, and one grape is a sufficient mouthful. In many places the grapes are kept fresh on the vines, during the winter, by securing them from birds and the weather in little bags : thus preserved, when brought to table, they display all the luxuriance and freshness of the ripe vintage.

The Persian historians say, that to this country, wine owes its origin. One of their earliest writers asserts that the monarch Jemsheed, famous as the founder of Persepolis, was the first who discovered the making and use of this liquor. He was long anterior to Cyrus, must have lived shortly after the Flood, and is celebrated as the inventor of many useful arts, and the introducer of the solar year amongst his countrymen. On the day of the vernal equinox, or when the sun enters Aries, he is said to have instituted one of the greatest festivals celebrated in Persia, that called *Nouroze*, or new year's day ; and there is yet observable, on the sculptured ruins of Persepolis, representations characteristic of this festival. It is observed with great rejoicing and public exultation. The affluent relieve the distressed, poverty is discarded, wine flows in abundance, while every species of amusement is resorted to, in order to enliven the conviviality of the occasion, and render the whole a scene of pleasure and delight. Even the dead and the ideal things of futurity are not forgotten, since rich viands are exposed on the house tops and towers, to gratify the palates of the Peries and the spirits of departed friends.* Jemsheed, it is affirmed, was passionately fond of eating grapes, of which Persia was the nursery, and desirous of preserving his favourite luxury, he deposited a large quantity in a vessel carefully secured in a vault. On repairing to his treasure some time afterwards, he was surprised to find that the fruit had burst and become acid. Ignorant of the nature of fermentation, and unacquainted with the virtues of the grape, in this new form, he considered it to be deleterious and dangerous ; and with this impression he got some vessels filled with the juice, on which he inscribed the word *poison*. To prevent bad consequences, he had those vessels placed in one of his own apartments. A favourite concubine, then labouring under pain and nervous debility, sought death as a relief from her afflictions ; and observing the word poison on one of the vessels in the monarch's room, she opened it, and swallowed the contents with avidity. The draught overcame her, and she soon fell into a sound sleep, from which she awoke, to her great surprise, much renovated.—

* D'Herbelot. Bib. Orientale, art Neurouz. Chardin. tome i. p. 173.

Charmed with the effects of the restorative, she repeated the draughts so frequently, that the poison soon became exhausted, which Jemsheed discovering, learned from the lady how her recovery had been accomplished. Immediately after this, he caused grapes to be gathered, and left in the same manner in large vessels. Wine was thus collected without further labour, and the court of Jemsheed soon resounded with the pleasure which the *Zeher-e-koosh*, or the delightful poison, as it is called, to this day, inspired.*

Many of the Persian monarchs, although they prohibited the use of wine, indulged privately in it themselves. Ul-Kausim was so enthusiastic in supporting the law of the prophet, that he caused all the vines, in the vicinity of one of the principal cities, to be cut down, lest the disciples of the Koran should be tempted to taste the juice of the grape, and hence he was nick-named the destroyer of vineyards.—When Sir Robert Ker Porter visited Persia, in 1819 and 1820, a prohibition against the use of brandy was enforced by the reigning monarch, who not only abstained from it himself, but ordered the officers of police, on the discovery of any jars containing it, to have them broken. This strictness did not, however, extend to foreigners, who it appears, are allowed the most liberal indulgence in the use of it, and a shop is even licensed in the metropolis for the special accommodation of the Russians, or other foreigners, who may be in the service of the Sultan. Age and infirmity serve as an excuse to many of the natives who secretly apply to this cordial ; but no such indulgence is allowed in public under pain of severe punishment.† When several casks of brandy were presented to one of the kings of Persia by the Russian ambassador, he, although in the habit of taking wine moderately, fancied that he was accused of a fondness for drink, and sent the casks back observing that he had no occasion for so much strong liquor, and knowing that the ambassador and suite, like all Russians, were accustomed to drink copiously, he was unwilling to deprive them of what he was certain, must be so gratifying to themselves. The Sultan, Abas Mirza, when visited by the Russian Envoy and suite, regaled them with the delicacies of the country, but, when they expected wine he gave them nothing but Sherbet, which singularity was imputed to his taste and love for that beverage, and to impress on their minds the strict respect he entertained for his religion and its injunctions ; such were his feelings, that, when receiving the presents sent to him by the Russian emperor, he observed, on taking up a beautifully ornamented goblet, " truly this glass is so fine, that it might seduce

* Vide Sir John Malcolm's History of Persia, 2 vols. 4to.

† Travels in Georgia, Persia, Armenia, &c. 2 vols. 4to.

me to drink, a crime of which I shall ever be afraid," and returned the goblet. How great the contrast between that monarch and Shah Abbas, who died in 1628. This emperor was much addicted to wine, and instead of treating his guests in the manner of Abas Mirza, he regaled them with wine out of golden goblets filled from flaggons of the same metal. It is stated that he was accustomed to drink goblets of pure wine on every great occasion, and particularly after a battle, when he would sit to receive the heads of his enemies until a late hour at night. On one of these occasions, a captive Kurd, of gigantic appearance, passed his tent, " deliver that prisoner to Roostum Beg," said the king, who knew there was an animosity between the friends of that chief and the Kurd tribe. " Pardon me," said the noble-minded Roostum, " my honour, it is true, calls for his blood, but I have made a vow never to take advantage of a distressed and hand-bound enemy." Irritated by this reply, the monarch ordered the head of the prisoner to be struck off, when on the instant, the athletic Kurd burst the cords, by which he was bound, and, unsheathing his dagger, rushed upon the sovereign. All was bustle, and confusion, and, in the hurry, the lights were extinguished. No one dared to strike lest the king might fall a victim, but, during the awful suspense, Shah Abbas exclaimed, " I have seized his hand !" In a moment, the unfortunate Kurd perished from the wounds of innumerable swords, and the king, resuming his seat with the utmost composure, passed the goblet to the health of his attendants; and continued to receive the heads of his enemies, which, the historian states, amounted on this occasion to 20545. Among the many anecdotes related of the attachment of Shah Abbas to wine, one states that he was, on a certain occasion, so intoxicated and outrageous that he stabbed his favourite queen ; and when he recovered from his delirium, and understood the dreadful act he had committed, under the influence of the deepest contrition, he issued orders to have every wine flask in the kingdom destroyed. The laxity of manners, so prevalent in this prince's reign, was suppressed by his son and successor, Abbas the II; but he, however, soon neglected the wise counsels of his ministers, and fell a victim to the same excesses as his father: so great was his love of wine, that he spared no expense in keeping a constant supply of every description, which, not only his own country, but foreign nations, could afford ; and this stock he had stored in flasks of the purest Venetian crystal. It is related of Soliman, the next sovereign, that he was actually addicted to intoxication ; and finding his prime minister a censor of his irregularities, he was determined to overcome, if possible, his extreme prudence and sobriety, " you must relax sometimes," said the monarch, to Ali Khan, amidst one of his

drinking parties, " or we never can agree." The minister observed that he lived as became his age and character. " Very true!" said Soliman, " but your conduct is my reproach, and I can no longer endure it," you must get drunk with us immediately, either with wine, or a preparation of opium, choose which you like best, but the dose must be swallowed ; it is the command of your king, who must be obeyed." The minister was obliged to yield, and, preferring the opium, soon fell senseless on the ground. In this state the virtuous Ali Khan, after having his beard shaven, was sent home ; but, on his recovery, finding the indignity he had sustained, he refused to return to court notwithstanding the repeated entreaties of the king, who soon became sensible of the loss of so excellent an adviser. Soliman continued to indulge in the same loose habits, and about four months after, in a drunken frolic, he condemned to death four of his favourites for a mere trifle ; but the moment that the sentence was about to be put in execution, Ali Khan rushed into the presence of the monarch, and begged for their pardon.—" You are very bold," said Soliman, " you continue to slight my earnest entreaties that you should again serve me, and yet you intercede for others." " I am your slave," said the minister, " and ready to obey your commands." " Very well!" said Soliman, " I forgive them all on your account, resume your office, and I will promise in future to respect both you and myself more than I have done."

Shah Husseyn, son and successor of Soliman, published an edict prohibiting the use of wine, as forbidden by the Koran, and ordered all wine-vessels, in his own cellars, to be publicly staved, and forbade the Armenians to bring any more, under a heavy penalty. This gave great alarm to the grandees and eunuchs of the palace, in consequence of which they applied to the king's grandmother, who was herself a lover of wine. Resolved to conquer the monarch's scruples, she feigned sickness. The physicians prescribed her wine, but this she refused to take unless the Shah himself, who had presented it to her, should first drink of it. This he was unwilling to do, through religious motives, but these she overcame, by quoting the Persian maxim, that kings are subject to no law, and that whatever they do, they commit no sin. By this artifice the prince was ensnared, he drank a large cup of the liquor, which he liked so well that he was scarcely ever sober afterwards.

In several reigns, since the conquest of Persia by the Saracens, in the first century of the Hegira, the prohibition of wine and brandy has been more or less observed ; but, as already noticed, the morality of the Persians has never been strictly regulated by the precepts of the

Koran, and old habits in a great degree still prevail.* After an evening's repast, supper being a favourite meal, the night is often enlivened by music and dancing. On these occasions, they frequently deviate from their sober habits by indulging in the use of wine and spirituous liquors, and particularly in the latter, as they more speedily create a vivacity and cheerfulness, not otherwise so easily excited.—This indulgence has often been known to hurry them into inordinate excesses. Although the liquor, of which they are so passionately fond, is, in many instances, a bad quality of spirits manufactured in Russia, and fit only for the palate of a Cossack ; yet they express surprise when Europeans shew a dislike for it, and even laugh when they see them putting water into their wine. The excuses which they form for indulging in drink are as ingenious as those resorted to by other Mahometans. Kotzebue tells us that, when on his way to Ispahan, he observed that the people of Erivan took plenty of frozen punch in the form of ice-cream without any scruple of conscience, because it was given as an eatable, and as a medicine for strengthening the stomach. In many respects, the Persians differ from other Mahometans ; and although the religious, or those who have performed the pilgrimage to Mecca, do not take wine, yet their good sense often induces them to overcome a prejudice imposed on them by the cunning designs of the prophet. A pleasing instance of this kind is related of a Mussulman who had been employed, for forty or fifty years, about the English factory at Gombroon. Being on the point of death, he was ordered a glass of wine by a European physician, which he atfirst refused, observing, " I cannot take it—it is forbidden in the Koran." After a few minutes' pause, he turned to the Doctor, saying, as he raised himself on his bed, " Although it is forbidden, give me the wine ; for it is written in the same volume, that all you unbelievers will be excluded from paradise ; and the experience of fifty years has taught me to prefer your society in the other world, to any place to which I could be advanced with my own countrymen."—How contrary is the conduct of Al Malec Al Saleh, a rigid Mahometan, who, when on the point of death, though ordered by one of his physicans to drink a little wine, as necessary for the cure of his distemper, chose, from a principle of religion, to die rather than to take it.

Since chemistry has not been cultivated by the Persians as among Europeans, their liquors owe little to its aid ; and hence, from their ignorance of the discoveries to which it has led, their arts also remain in some measure stationary. They are yet infatuated by the pursuit

* Krusinkis' Memoirs, with Ducerceau's Hist. of the Sophies, 8vo. p. 54–56.

of alchymy in the hope of discovering the philosopher's stone; but as that study is conducted with the greatest secrecy, and under circumstances veiled in impenetrable mystery, nothing can be expected that would add any thing substantial to their stock of scientific knowledge. At what time the use of the still was introduced into Persia is not known, but the export of its distilled waters formed an early item in its trade with India. Whatever may have been the knowledge of this people, previous to their submission to the Arabs, it is generally allowed that medical science was soon afterwards cultivated among them with considerable success; and to the preparations which that art required, may, perhaps, be attributed the early celebrity of their *Rose-water*, in the distilling of which they excelled all other nations, and of which they are considered to be the inventors. The Arabians alone rivalled the Persians in this respect, since it appears that, in 1188, when Saladin became master of Jerusalem, it required upwards of 500 camels to transport from Yemen the quantity of Rose-water necessary to purify the temple from the stain it was considered to have received from being in possession of the Christians. Could it have been from the Persians, that the Emperor Heliogabalus procured the distilled rose-water, with which, amongst his other extravagancies, he filled his fish-ponds? If so, it would place distillation as being earlier known amongst them than that of which we have any record. Avicenna, who died in 1036, speaks of the distilled water of roses, and appears to have been familiar with its properties, and the virtues of the flowers from which it was drawn. No country on earth, it is thought, can boast of a greater variety of fruits and flowers than Persia. There are no less than twelve or fourteen species of grapes; the most esteemed are the violet, the red, and the black. The dates are of the richest and best description, and the sirup they yield is considered of a very superior quality. All the European fruits are found growing in Persia in great luxuriance, with apricots, nectarines, and peaches that weigh sometimes sixteen or eighteen ounces each. Oranges, pomegranates, melons, pistachios, almonds, and figs abound. Sir John Chardin saw fifty different kinds of fruit produced at an entertainment near Ispahan, from a number of which, various descriptions of drink were manufactured, some of a mild, and others of a very intoxicating nature. Of these we find that, at an early period, dates and raisins were converted into a drink called *Nubeez*, and in the first century of the Hegira, the use of this liquor was permitted by certain sectarians who considered it not within the strict meaning of the prophet's prohibition. The Gaurs, or ancient Persians, whose religion did not prevent them from drinking wine or other strong

liquors, cultivated dates, not only for their use as food, but in order to afford them an exhilarating beverage. The dates of Persia are esteemed the richest in the world, their sirup being sweeter and more pleasant than virgin honey. The palm, which produces them, is the highest of all fruit-bearing trees, and has no branches but at the very top : it produces fruit at fifteen years' growth, and continues bearing till it is two hundred years' old. In several places, the date stones are ground, from which an oil is extracted, and the residuum, or paste, is given to cattle and sheep, and is considered very nutritive. A drink, called *Sheerah*, is also made from the inspissated juice of the grape, and which is the same as that produced from *debs* in Arabia. Chardin speaks of pomegranate wine being had in great quantities, and, in Canticles viii. 1., notice is taken of wine of pomegranates, which shews that it was in very early use. This fruit is frequently alluded to in Scripture ; the modern Turks about Aleppo make a description of drink from it, as it is not forbidden by the Koran. The fruit is as large as an apple, and is useful in warm countries for allaying heat and quenching thirst, as it contains a finely acidulated juice, which, as well as every other part of the fruit, is highly agreeable. Mr. Harmer, in his observations on various passages of Scripture, has made some curious remarks on this description of wine, but he seems to be in doubt whether it was pomegranate wine, that is to be understood in the portion of Scripture, above quoted. On this point there is no difficulty, as it has been made in such quantities as to be sometimes exported. The Persians have several sorts of pomegranate, such as the sour, the sweet, and a mixture partaking of both qualities.

The mild and temperate heat of the climate of Persia has covered, as with a carpet, a great portion of the country with flowers of the most gorgeous and brilliant hue. Neither those of Europe, nor those of India, can vie with them. Their roses are celebrated for uncommon beauty, the bushes bearing often three different sorts on one branch, such as yellow, black, and red.* From the neighbourhood of Shiraz are yearly exported 2000 chests of rose-water, each chest containing twelve English gallons put up in glass flasks, while ten times that quantity is consumed in Persia, Arabia, and Hindostan.† In India, particularly in the district of Ghazeepoor, are extensive rose fields, from which immense quantities of rose-water are distilled, and the *atter*, or *otto*, of roses is made. This valuable perfume is obtained, after the rose-water is distilled, by exposing the

* Univ. Hist. vol. iv. p. 539. Morier's Journey, &c.

† Hamilton's Account of the East Indies. Bernier, &c. Franklin's Tour.

water to the atmospheric air, in large open vessels during the night, and at sunrise skimming off the oil, which floats on its surface. It is said that it requires 200,000 well-grown roses to produce one rupee's worth of *attar*. The love of the Persians for the rose is so great, that Saadi, one of their most eminent poets, has given the name of *Gulistan*, or *Garden of Roses*, to one of his poems, and their passion for this flower he thus beautifully expresses:—"What," says a friend, "hast thou gathered for us in this garden of delights?" "I fancied," replied the poet in an ecstacy, "that I was opposite a rose tree, and that I filled the skirt of my robe with flowers to present them to my friends; but when I had nearly reached them, the perfume of the roses so overpowered me, that my garment slipped from my hands, and thus gave to the envious winds the treasures I was about to bestow."

Various kinds of grain are cultivated in Persia, but few undergo the fermenting process. Wheat, barley, rice, oats, rye, and millet, are reared with much care and success. Wine and brandy are sold by weight and not by measure, and at Shiraz, as well as in most other cities of the empire, these commodities are stored in large well-glazed earthen jars, or in glass bottles, called *Karabas*, which are a finger-breadth in thickness, and hold near thirty quarts. These are arranged in spacious well-built cellars, constructed for coolness with fountains, and provided with seats: in these retreats of silence and of solitude, the wearied visitants are often made to forget their cares, with copious draughts of those exhilarating liquors.

About Derbent, and its vicinity, the wine jars are buried under ground, for the sake of preserving the flavour and strength of the liquor, for a longer time than if exposed in the cellars. The juice of the grape is converted by the Turcomans, bordering on the Persian empire, into a thick jelly by boiling; and in that state it is carried by them, in their warlike excursions, and forms a nourishing kind of food. In Persia, according to Sir John Malcolm, a tax is levied on vineyards and fruit trees, at the following rates:—

	Deenars.*
Vineyards, faryab, or "certain water,"	6 per vine.
If bukhs, or "uncertain water,"	5 do.
Apple, pear, peach, &c.	20 per tree
Walnuts, ...	100 do.

Grapes are so cheap, that the finest are obtained in the markets of Shiraz, at less than a half-penny the pound; and in some parts, these, as well as other fruit, have hardly any value, so that, with the cheapness of provisions, the lowest order of the people live comfortably.—

* Accounts in Persia are kept in *deenars*, a nominal coin, of which there are 1000 to the *piastre*, or about 500 to the British shilling.

When Bell was in that country, grapes were so abundant, that they were left hanging in clusters on the vines, twisted round the trees in the woods, as a prey to the fowls of the air. Though the vine flourishes luxuriantly, in the southern provinces, yet, in the north-western, they are obliged to bury the shoots, to protect them from the winter frosts.

In the distillation of brandy and other liquors, the apparatus employed by the Persians is simple, and, for the most part, consists of earthen vessels, the still being merely a jar, sufficiently strong to bear the action of the fire. The condensation of the vapour is effected by the old and clumsy method of pouring cold water on the cucurbit, or head, which presents a broad surface to the water, that surrounds it in the tub, and when the still is to be charged, the lid is removed, and the liquid, to be distilled, is poured in by an attendant. The time of charging is determined by the weakness of the spirit from the condenser, and the whole operation is completed with little fatigue, expense, or trouble.

In the preceding survey of the principal nations, where the influence of Mahometans has rendered the use of intoxicating liquors objectionable and penal, we have seen that this prohibition has tended to render men artful and hypocritical, and although abstinence from inebriation is at all times commendable, yet, when carried to a complete deprivation, it has a contrary effect. The Romans prudently forbade their wives to drink wine, lest they should fall into criminal intercourse through intemperance.* The Egyptians, from temperate motives, would not allow their priests to indulge in wine, but this abstinence was not always observed. Their dislike to this liquor is said by some to have arisen from the circumstance of Noah's inebriety, the recollection of which still excites great abhorrence among them, and this is supposed to have been the real origin of the antipathy to wine, shewn by many eastern nations. The Jewish Levites were forbidden to drink wine, only before their entrance into the sanctuary; but there was no perpetual prohibition, as the great object was to prevent the abuse, not the use of a wholesome and exhilarating beverage. The Holy Scriptures have no absolute command against the use of wine, nor any other liquor, unless it should amount to intemperance, and against this the sacred volume is explicit and determined. That an antipathy to wine, founded either on policy, delusion, or superstition, has influenced certain portions of mankind, from the earliest ages, is evident, and traces of it are found in the writings of Moses, even so early as the time of Joseph. But the prohibition of

* Valerius Maximus, b. ii. ch. 1.

this drink does not appear to have originated through anxiety for the preservation of health, or purity of morals, but rather from an economical prudence, or to promote the interests, and secure the policy of nations, or individuals. Abstinence from wine was manifestly beneficial to the Egyptians, because their country was not a land of grapes; hence its prohibition was enforced, under the pretext of morality and philosophy: it was even forbidden to be used in divine worship, though there was no objection to eating the grapes. Moses, to obstruct the return of the Israelites to Egypt, enjoined the use of wine, and made it an accompaniment of the Jewish offerings, that, as a judicious writer expresses it, no person might consider it as impure, or abhor it from a motive of religion; nay, he every where speaks advantageously of wine, the principal production of the Land of Promise: thus, although, in the earliest ages of its existence, wine met with wise opponents, it found, nevertheless, still wiser advocates. The philosophers and moralists of ancient times condemned every description of excess: Galen, although he called wine *the nurse of old age*, was against its abuse. Mnestheus would indulge men in harmless potations.—Seneca thought the senses ought not to be overcome, but the cares of life might be lightened, by an exhilaration of the spirits. Plato considered wine as the renovator of old age, and the enlivener of society, when kept within the limits of discretion. Pythagoras, with all his stoicism, is said not to have been insensible to a well regulated indulgence in the use of wine. Asclepiades, a physician, who practised at Rome, ninety-six years before the Christian era, successfully administered wine, with every remedy, to all his patients, and wrote a treatise on its virtues, in which he observed that the gods had not bestowed a more valuable gift on man. Diogenes, though so rigid a philosopher in self-denial, drank wine with more than common gratification: and though he threw away his water bowl as superfluous, when he beheld a man drinking water out of his hands at a brook, yet, it is affirmed, that he never refused the wine goblet, when presented to him at another's expense. Hippocrates, the father of physic, recommends a cheerful glass, and even Rhases, a Mahommetan, says no liquor is equal to good wine. Amongst its many modern advocates in the medical profession, Doctor Whitaker, physician to Charles the Second, undertook to prove, by the use of wine, the possibility of prolonging life, from infancy, to old age, without sickness or infirmity.

The opinion of the prophet is also contradicted by the conduct of our Saviour, on the occasion of the marriage at Cana, when he turned the water into wine, not only with a view of shewing his miraculous powers, but of making the parties more cheerful. From the earliest

periods, wine seems to have formed a portion of the entertainment, not only at marriage ceremonies, but at the most solemn sacrifices where libations were poured out; and it requires no force of argument to shew that the moderate use of wine must have been sanctioned by the Almighty himself, when our blessed Lord had recourse to a miracle, to supply the wants of the guests where he was present. St. Paul advised Timothy to use a little wine for his stomach's sake, and the use of it, in the institution of the Sacrament of the Lord's Supper, is a further unquestionable proof of its value and excellence; and that it is the abuse of it only that is objectionable. To use the language of Blair, it is that thoughtless and intemperate enjoyment of it, which wholly absorbs the time and attention of men; which obliterates every serious thought of the proper business of life; and effaces the sense of religion and of God, that is to be dreaded and avoided.

On what rational grounds, Mahomet forbade the entire use of wine, has never yet been determined, but that the prohibition has not been accounted just, is proved both from its direct and indirect violation, as well as from its having engendered more vicious habits, than it has prevented evil consequences—facts that have been but too well attested, and of which the following is a melancholy illustration. Aureng-Zèbe in the frenzy of his zeal to support this Mahometan dogma, entered the tent of his brother when he knew he was in a state of intoxication, and, surrounded by soldiers, directed his head to be taken off, which cruel act he justified by saying, that he deserved death for disobeying the laws of his religion, and rendering himself unfit for the duties of life. This is but one of a thousand heinous acts that might be produced to strengthen the justice of these observations; but enough has been said to prove that this extraordinary command of the Prophet was issued rather from a view to distinguish his religion, and render his doctrine more imposing, than from a principle of moral rectitude, or a wish to promote the happiness of mankind.

The general use of opium and other exhilarating substances, with all their concomitant evils, may, therefore, date its origin from this mandate of the Prophet, while the restriction shews to what subterfuges men have recourse, when injudiciously forbidden to exercise their discretion and common sense, in either the gratification of the passions, the protection of the moral virtues, or the freedom of opinion, whether in religion, politics, or philosophy. The properties and consequences of these natural inebriants I shall now proceed to describe.

The poppy, *papaver somniferum* in botany, is a plant remarkable for its peculiar properties. It was so called, because it was commonly mixed

with the pap, (*papa*,) given to children in order to ease pain, and induce sleep. The term *papa* is also applied by the Peruvians to their chief article of subsistence, the potato, which they mix with other ingredients in a very savoury and substantial manner. There are various descriptions of the poppy, one of them, *papaver album*, or white garden poppy, is indigenous to most countries, and is so called, not from the colour of its flowers, which is diversified, but from the whiteness of its seed. Its juice is called by the Persians *afioun*, and by the Arabians *aphium*, from which, says a learned writer, is derived our word opium. Others think it comes from the Greek *opos*, *succus* in Latin, implying any kind of vegetable juice; but it has been subsequently confined to the juice of the poppy alone. At what time opium first came into use is uncertain; but Homer is reputed to have known of its virtues, and the *Nepenthe* mentioned in the Odyssey, is by some supposed to have been a preparation of this drug, which was originally brought from Thebes, and on that account called the Thebaic tincture, and known by that name at the present day. The composition of the *Nepenthe* is said to have been imparted to Helen by Polydamna, wife of Thonis, king of Egypt.* No allusion is made to this drug in Scripture, and it may consequently be inferred that it was unknown to the Jews. Herodotus asserts the Massagetæ and all the Scythians had among them certain herbs, that they threw into the fire, the ascending fumes of which they anxiously inhaled. With these they became as much intoxicated as if they had taken large portions of wine, and exhibited in their songs and dances all the ridiculous frolics and gesticulations which are the result of inebriety.† Opium is not mentioned by Hippocrates, though it is affirmed that it was known to Diagoras, who was nearly his contemporary. Some writers consider the use of opium as very ancient, and it is asserted that the Pagan priests had recourse to a narcotic, previously to the delivery of their oracles, and under the influence of which they acted on such occasions.

For the sake of this drug, the poppy is cultivated to a great extent in several parts of the East. In some of the Turkish provinces of Asia, particularly Natolia, it is reared to perfection, and opium of the best description is obtained. The poppy of Persia, however, is esteemed the finest in the world, not only in respect to its beauty, but because its juice is much stronger than the juice of the same plant elsewhere, yielding a greater quantity of opium, and therefore in the highest estimation. It grows in some places to the height of four feet and upwards, with a beautiful corolla of white leaves at the vertex. In June, when

* Odyssey, L. IV. v. 228.

† Herodotus, b. i. sec. 36.

it is ripe, the juice is extracted by incisions in the head, and gathered every morning before sunrise. The effect of collecting the opium, in this manner, is said to have such an influence on those employed for that purpose, as to make them appear as if buried and again taken up, and their limbs tremble as if they were affected with palsy. Amongst the Persian bakers, it is a practice to strew poppy seed on the bread, with a view to enhance its sale, and the common people eat the seed at any time with pleasure, a practice common in our own country.

This plant is indigenous to most countries, and the method employed to procure the drug is almost everywhere the same. In India, opium is the staple commodity of many of the provinces; the method of cultivating the plant, which requires a dry soil prepared for the purpose, and obtaining the opium, is nearly the same throughout Hindostan, and is commonly as follows:—The seed is generally sown in October and November, when the periodical rains cease. The plants are kept about eight inches distant, and well watered by means of furrows, till they rise nearly six inches above the surface. A fortnight or three weeks after sowing, some of the seeds are dug up, in order to see whether they have germinated, and if so, the process is commenced. If the plants happen to be too near each other, some of them are pulled and used as potherbs; but they cannot serve for that purpose when they become more advanced; being then of a strongly intoxicating nature. At these early stages, a mixture of dung, nitrous earth, and ashes, is strewed round the plants, and a little before the flowers appear, they are again repeatedly watered, till the capsules are half grown or the petals of the flowers fall off; the collection of the opium then commences, because when fully ripe little juice is obtained. The white kind yields a larger quantity than the red, but the quality of both is the same, yet the white is accounted preferable. When the capsules assume a whitish appearance, incisions are made in them with an instrument having three teeth at a very small distance from each other, merely to perforate the skin without penetrating the cavity.

These wounds are made from the top to the bottom of the capsule so as not to wound the inner membrane, for, should that be the case, the root would instantly die. This operation is always performed at sun-set, and repeated for three or four successive days, and the juice, which is of a milky appearance flowing therefrom, is collected the following morning, and permitted to purify itself by fermentation. In this manner the whole crop of a field is wounded, and the opium collected from it in about fifteen days, an incredible number of men, women, and children, being employed on the occasion. The juice, having exuded and thickened by exposure to the air, is scraped off

with a shell or little iron instrument, previously immersed in oil. It is afterwards worked in an iron pot in the sun's heat, till it is of a consistence to be formed into thick cakes of about forty pounds' weight. These are covered over with leaves of poppy, tobacco, or some other vegetable, to prevent their sticking together, and in this condition they are dried. They are usually packed in square boxes lined with leather, and wrapped in a kind of canvass named *goenje;* the boxes, when packed, are weighed, and marked accordingly.

In India, opium brings about fifteen shillings a pound: in Bahar alone, the quantity annually collected is about 16000 maunds, or upwards of 1,000,000lbs. In Malwa, above 350,000lbs. are yearly produced, and of these 140,000 lbs. are retained for home consumption.* Extensive warehouses for storing this article have been erected in different provinces; at Banhypore, a portion of the suburbs of Patna, there is a large emporium of this kind.

In the district of Bahar, irrigation is used in the cultivation of the plant, and the juice is gathered in small brass pots or cocoa nuts, each having a little linseed oil to prevent the opium from adhering to the vessel. It is afterwards pressed in large pots, and left in the oil till after the rainy season, when it is removed, and formed into flat cakes of about one inch thick and three or four inches in diameter; over these are strewed dried leaves of the poppy, and, in this state, they are left under a shade in the air until sufficiently dry. Retail merchants sometimes adulterate it with pounded leaves, cow dung, coarse sugar, and other ingredients, but it is seldom deteriorated by the growers. The culture of this article and the sugar cane is the most profitable of all the branches of husbandry in India. The poppy, like both vegetable and animal life in all countries, is greatly influenced by the climate. India produces opium of the finest quality, while Egypt and Natolia furnish it much stronger than any produced in Europe. The manufacturers in Bengal generally adopt the Turkish method of making opium, and much benefit has been derived from their system. In the Nepaul territory, particularly among the hills at the foot of the Himaleh mountains, the opium is gathered from the plant about the end of July. All along the valleys which lie at the base of this stupendous range, it grows luxuriantly, though an expensive crop, as it requires much manure and great attention. It forms a considerable article of trade with the people of the plains, who vend it to the merchants of Bootan, and those of the adjacent countries.

Under the Mogul government, opium having been a monopoly

* Malcolm's Central India, vol. i. p. 8.

was sold to a contractor. The British Company followed the same practice till 1785, when the sale of this article was exposed to public competition. At that time, regulations were made not to compel the cultivators to grow it at the contractors' price; but as the government still held the monopoly, a price wasfixed at which the *ryots*, or cultivators, were obliged to furnish the article, so that the Company were both contractors and purchasers; yet they allowed the grower a fair recompense for his labour and industry.*

In the whole of British India, the estimated revenue arising from opium, at the commencement of the new East India Charter, in 1834, was £1,427,917.

The revenue arising from the sale of opium to the government of Bengal, in 1809 and 1810, amounted to £580,000. The export of this article from Bombay, Fort St. George, and Bengal, respectively, to the eastward islands, from 1814, to 1818 has been valued at 8,057,357 rupees.† To China were sent by country ships from Patna and Benares in 1817 and 1818, no less than 485 chests, valued at 611,000 dollars, besides 1950 chests of Bengal opium, rated at 2,340,000 dollars, imported into Macao. In 1818 and 1819, there were 4978 chests, valued at 4,393,000 dollars, sent to Macao from Bengal, Malwa, Patna, and Benares.‡ From 1804 and 1805 to 1817 and 1818, there were carried 1780 peculs by American ships to Canton;§ and the whole quantity sent thither by the same traders, from 1815 to 1819, appears to be 1834 peculs, which, at 550 dollars the pecul, amounts to 1,008,700 dollars.‖ The opium, exported in 1814 and 1815 to 1818 from the united kingdom to Bengal, Fort St. George, and Bombay, exclusive of the trade of the East India Company, has been valued at 122,815 rupees, or £12,281 10s.¶

A late writer informs us, that the trade in this article, with the exception of what is imported into Macao for medicinal purposes, is conducted by smugglers; and so artfully is the practice carried on, that about 4000 chests, weighing 533,333lbs. are sent in this contraband way, notwithstanding the frequent edicts of the emperor against it, and the use of it being rendered a capital offence. From ten to twenty Portuguese, American, and British ships, of three and four hundred tons burden, freighted with opium, are constantly anchored at the small island of Lintin, in order to supply the demand for this article.

* Mills's History of British India, vol. v. p. 419.

† Parliamentary Report of 7th May, 1821, p. 319.

‡ Ibid. pp. 326, 327. § Ibid. p. 44. ‖ Ibid. p. 181. ¶ Ibid. p. 238.

Opium brings such a price in China, varying according to its quality from 1200 to 2000 Spanish dollars per chest, that merchants run every risk to supply the market. The sale is chiefly conducted by means of the inferior Mandarins, as well as some of the higher ones, who receive considerable bribes for their connivance. Sixty dollars at Macao, and the same at Canton, are the common fees. Armed boats, known by the name of opium boats, constantly sail between Macao and Canton with this drug, sanctioned by the officers of the customs, who likewise receive a bribe for their indulgence; shewing that in China, as in other countries, every man has his price.* The ridiculous flourish made by the Imperial fleet, to disperse or destroy those smugglers, is a farce carried on once or twice a year, the commander, contented with having his coffers well filled, returns to Canton, boasting of services which he never intended to perform. The prohibition of opium shews bad policy, as the emperor by this means loses, it is said, a revenue of from four to five millions of dollars annually, since its use through the empire is as common as tobacco in other countries. Opium is prepared for smoking among the Chinese in the same way as it is to be found in our apothecaries' shops for sale. The preparation, necessary to be used at one smoking, is weighed and put into a pipe much resembling that common with us for tobacco. A tincture, made from this drug, is introduced into a tube resembling a flute in size and shape, and, when set on fire, the exhalations are inhaled, and the effects are of the most exhilarating and rapturous nature.

The Mandarins, besides smoking, use it also in the form of tincture, and usually carry a small bottle of it about them. The present emperor of China has been described as incapacitated for any business, through the excess to which he has carried the debilitating practice of smoking opium. In the Chinese Register for September, 1833, it is related, that at one time, during a rebellion, the emperor's troops were discouraged, and would not proceed against the enemy, owing to the want of opium, their accustomed stimulant.

Besides the quantity of opium that is purchased at the East India Company's sales, and sent to China in British country ships, there is also smuggled an immensity of Malwa and Smyrna opium. The consumption of this article in 1819, was valued at 4,159,250 dollars, and in 1828, at 10,356,833, making, in nine years, an increase of 6,197,583 dollars. Such is the extent of the opium trade, that from 15 to 20,000 chests are considered as the nearest approximation to the actual quantity sent yearly into China; and notwithstanding, this

* Parliamentary Report of 7th May, 1821, p. 181.

drug has been denounced as a poison, and also prohibited through religious scruples, yet it is certain, that it not only makes its way into the most remote parts of the Celestial Empire, but even within the walls of the Imperial palace at Pekin. Though it is generally considered that trade is carried on through the ports of Canton and Macao only, yet it is known, that cargoes of opium have been landed at Chingchoo and Chusen, as well as at places more northerly, and also in the islands of Formosa and Hainan.

The importation of opium is prohibited in Cochin-China, but the sale of it is readily effected, through the dexterity of the Chinese.— In 1822, the importation was reckoned at 150 chests, 40 of which were for Cambodia, 10 for the capital, and 100 for Tonquin.— Men and women of the better classes, in Cochin-China, always carry about with them a pair of silken bags or purses, either in the hand or thrown over the shoulder. In these are kept the betel box, tobacco, and opium. Females, of the lower order, are denied this privilege, while men of the same grade, when met by a person of condition, are obliged to conceal those bags, as a token of respect.

The export of opium from Turkey is extensive, but confined to a limited number of Jewish brokers. These are accused of adulterating the article, and it is done so artfully, that the secret is known only to themselves. The Americans are the most extensive purchasers, and they carry it to China and other parts of the East. The Turks accuse them of being slaves to the use of it, and that they purchase it for their own gratification ; but the fallacy of this accusation is contradicted by the fact, that the Americans are too fond of ardent spirits to become chewers of opium.

This drug is taken in different ways, and its effects are found to vary, according to the constitution and temperament of the individuals by whom it is used. Some it inspires with grand and sublime ideas. The ambitious man beholds at his feet monarchs and slaves in chains ; the bilious man is seized with visions of horror and dismay ; the mild and benevolent man sees all the world applaud him; while the timid is endowed with courage, the lover with tenderness, and the vindictive with ferocity. In some places it is taken in pills, and in others smoked with tobacco. In the Ottoman dominions, travellers carry it in the form of lozenges, or cakes, upon which is stamped in Turkish character, as a legend, "*Mash Allah*," the gift of God.* The Persians take pills of opium, which some of them gradually increase to such a dose as would destroy half a dozen

* Griffith's Travels in Europe, Asia, &c. 4to. pp. 86, 87. Dalloway's Constantinople.

Europeans. In the course of an hour, when the drug begins to operate, a thousand pleasing scenes are presented to the imagination, raising the spirits to a degree of enthusiasm and rapture, known only to those who have been affected by the delirium. When its influence has ceased, the spirits become exhausted, and the votary pensive and melancholy, till the dose is repeated. A decoction of poppy seeds, termed *kokemaar*, is sold in the coffee-houses of Persia, and is usually drank scalding hot. Tavernier mentions houses called *kokemaar kronè*, in which people drink this liquor, and afford considerable amusement from the ridiculous postures, and gesticulations, which they assume. At first they appear to quarrel with one another, using abusive language, without coming to blows. As the drug operates, they cease to be boisterous, and gradually becoming peaceable; one utters high-flown compliments, another relates stories, while all are ridiculous, both in words and actions.* The drink just described, as having intoxicating qualities, could not have been a mere decoction of the poppy seeds, but having something superadded, as the somniferous effect of this plant resides in the milky juice of the capsules, and the narcotic power attributed to the seeds is without foundation, since it is well known, that they are eaten without any such effect.

Doctor Madden relates, that while in Constantinople, he had the curiosity to try the effects of opium on himself. For this purpose, he repaired to the general rendezvous of the *Theriakis*, or opium eaters, which is situated in a large square near the mosque of Solymania, and where, on benches outside the door, the votaries await the voluptuous and glowing images, which are presented by their excited imaginations. The Doctor's sensations are best described in his own words. "I took my seat," says he, "in the coffee-house, with half a dozen Theriakis. Their gestures were frightful. Those, who were completely under the influence of the opium, talked incoherently; their features were flushed, their eyes had an unnatural brilliancy, and the general expression of their countenances was horribly wild. The effect is usually produced in two hours, and lasts four or five. The dose varies from three grains to a drachm. I saw an old man take four pills, of six grains each, in the course of two hours. I was told he had been using opium for twenty-five years, but this is a very rare example of an opium-eater passing thirty years of age, if he commence the practice early. I commenced with one grain; in the course of an hour and a half it produced no perceptible effect; the coffee-house keeper was very anxious to give me an additional pill of two grains, but I was contented with half a one; and in another half hour,

* Tavernier, vol. I. b. v. chap. 17.

feeling nothing of the expected reverie, I took half a grain more, making in all two grains, in the course of two hours. After two hours and a half from the first dose, I took two grains more, and, shortly after this dose, my spirits became sensibly excited, the pleasure of the sensation seemed to depend on a universal expansion of mind and matter. My faculties appeared enlarged ; every thing I looked on seemed increased in volume, I had no longer the same pleasure when I closed my eyes, which I had when they were open. It appeared to me as if they were only external objects, which were acted on by the imagination, and magnified into images of pleasure ; in short, it was " the faint exquisite music of a dream" in a waking moment. I made my way home as fast as possible, dreading at every step, that I should commit some extravagance. In walking I was hardly sensible of my feet touching the ground ; it seemed as if I slid along the street, impelled by some invisible agent, and that my blood was composed of some ethereal fluid, which rendered my body lighter than air. I got to bed the moment I reached home. The most extraordinary visions of delight filled my brain all night. In the morning I arose, pale and dispirited, my head ached ; my body was so debilitated, that I was obliged to remain on the sofa all the day, dearly paying for my first essay at opium eating."*—Opium is sold at the public bazaars, in the drug market at Constantinople, and is exposed in large black balls, or cakes, which appear like Spanish licorice. These balls are cut smoothly with knives, to shew their interior, and half a dozen, or more samples, at different prices, are placed together. The cheapest and worst sort, is of a brown colour, filled with stalks and leaves ; that of the highest, is almost jet black, and is perfectly free from impurities.

Rigid Mussulmans condemn the use of opium, and their preachers declaim against it from the pulpit. One day, a very holy and zealous preacher, in holding forth with more than ordinary warmth against the pernicious qualities of this drug, by great bad luck, let fall his own opium-pouch, among his auditory. Without being in the least abashed, he, with the greatest presence of mind, affected to have premeditated what had happened so much against his will, and exclaimed.—" Behold the enemy, the demon, the fiend, I have been speaking of ! Be upon your guard lest it spring upon some of you, and gain possession of your souls !" By this delicate turn he escaped from public ridicule or indignation.

From Salonichi and other parts, the French draw opium to the value of £2,400, and the Italians, to that of £3,600. The Turks,

* Madden's Travels in Turkey, &c. 2 vols. 8vo. vol. i. p. 24.

according to Beaujour, reserve for their own use, that which flows naturally from the head of the poppy, and they dispose of the condensed liquor, which they extract from the plant by incision, or expression. This fascinating drug, which places its votary, as it were, between life and death, or in that state of lethargy, which lulls all thoughts asleep without excluding the sensations, is sought after with avidity, by the voluptuary and the Epicurean Theriaki. Many persons are found to spend their whole lives in drinking coffee, smoking tobacco, and swallowing opium. Beaujour gives an account of a Turkish Effendi, who took every day thirty cups of coffee, smoked sixty pipes of tobacco, and swallowed three drachms of opium, while his solid food consisted of only four ounces of rice. The appearance of this singular character was that of a species of mummy, with the muscles apparently glued to the skin: he adds that every opium eater becomes in the course of time extremely bent in the back bone; and he tells us that the Janissaries were in the habit, when going to battle, of taking opium as an exciter of courage, as the German soldiers take brandy for a similar purpose. The Turkish opium is said to soothe or excite the senses, according to the preparation it undergoes. That, which is mixed with nutmeg or saffron, becomes aphrodisiac, and inspires amorous desires. It is made up in small pills, of which the wealthy Turks know how to take advantage, to administer most to their own sensualities.* Many of the opulent, at Surat, indulge in this drug from the same motives; for which purpose, Grose tells us, it is usually taken in milk, boiled from a large to a small quantity, and when a check is desired to be put on the effect, a spoonful or two of lime juice, or of any equivalent, is applied, which instantly destroys the influence the opium had previously excited.† Sir Astley Cooper, in his lectures on the principles and practice of Surgery, gives it as his opinion, that the use of opium diminishes the virile powers and the disposition to sexual intercourse; for notwithstanding, it is asserted, that the Turks often take it for the purpose of increasing amatory indulgence, he found it to produce an opposite effect. This he corroborates, with several examples.‡ The justice of the remark may perhaps be questioned, since almost every writer, who touches on the use of opium, in eastern countries, concurs in the opinion, that its stimulating propensity is one of the strongest pleasures it affords; but to reconcile these opinions, it appears to operate like the use of ardent spirits in this country, which, while it

* Beaujour's View of the Commerce of Greece, 8vo. p. 176.

† Grose's Voyage to the East Indies, vol. i. p. 119.

‡ Sir Astley Cooper's Lectures on Surgery, 8vo. pp. 450–1–2.

contributes to indulgence in this respect, eventually diminishes the powers of its accomplishment. In Siam, the sale of opium is contraband, and many have suffered death for importing it, as its use in that empire has been productive of the worst consequences. Mr. Abeel relates that the king, on one occasion, finding that his son was in the habit of smoking opium, immediately commanded his property to be sold, and himself to be arrested and imprisoned, for execution; and it was not without the greatest exertions, by the mother and princes in authority, that his doom was averted.* The Chinese, however, can sell it through the country, without inconvenient restriction. It has been known, that a few of their junks have disposed of 100,000 Spanish dollars' worth, in a few days. The Siamese use it, first beginning with a grain, and encreasing the number to half a dozen, or more. It is swallowed and smoked indiscriminately, the usual effects of which are soon visible, by producing a sleepy drunkenness, yet such is their fondness for it, that it sells for its weight in silver; but this is not surprising among a people who believe that dreams are books in which the fates are written.†

The inhabitants of Borneo smoke opium with tobacco in the same manner as the people of Sumatra. The mode of preparing it for use is as follows :—The raw opium is first boiled in a copper vessel, and strained through a cloth, and then boiled a second time; the leaf of the tobacco is cut fine and mixed with it, in a quantity sufficient to absorb the whole, when it is made up into small pills, about the size of a pea, for smoking. At convivial parties, a dish of this is brought in with a lamp, when the host, taking a large pipe, puts into it one of those pellets, blowing the smoke through his nostrils, and, if he be an adept, through the passages of the ears and eyes. He seldom takes more than three or four whiffs, ere he passes it round to the rest of the company, (one pipe serving them all,) who act in the same manner, and so continue smoking until completely intoxicated. They are sensible that it shortens life, but that does not cause them to abstain from it; and their women encourage the use of it, because they conceive that it heightens the love of their husbands. This preparation of the opium is called *maa*, and it is often adulterated in the process, by mixing jaggory, or palm sugar, with it, as is the raw opium, by incorporating the fruit of the plantain.

On the western coast of Sumatra, about 150 chests, or 20,000lbs. weight of opium are consumed annually, where it is purchased on an average at 300 dollars the chest, and sold again at 500 or 600 : but

* Abeel's Residence in China, 8vo. p. 224.

† Chamont, Voy. de Siam.

on occasions of extraordinary scarcity, it has been known that a single chest brought upwards of 3000 dollars.

The inhabitants smoke it through a pipe, or apparatus, like the Turkish *hookah*. Anderson met a Rajah, who smoked in the evenings, until he became so stupified and giddy, that he was incompetent to pass his own threshold without support. He told him that he used a ball, or *catty*, annually; and, like all slaves to this drug, he had a very sickly and emaciated appearance.

It is a curious fact, as remarked by that writer, that in most of the places he visited, where opium was in the greatest consumption, there were fewer children, than where the people entirely abstained from it; thus furnishing a strong proof, that the inhabitants addicted to it were practical Malthusians.*

Besides opium, the Sumatrans have recourse to other stimulants, of native produce, and they are so deeply skilled in their use and power, that they ensnare fish by steeping the root of a parasitical plant, called *tuba*, and casting it into the water. This has so great an effect, that the fish, as if intoxicated, float apparently dead on the surface; and while in that state are taken up by the fishermen. In the same manner, the people of Jamaica employ the *Tephrosia Toxicaria*, after pounding its leaves and branches. These they throw into ponds and rivers, and the fish, which greedily eat it, become stupified, and are easily caught. It is also used like opium for its intoxicating qualities.

Maddat is a term for opium on the eastern coast of Sumatra, where it is imported at a duty of 20 dollars per chest, and, in some parts, at 76 dollars per cake.

Opium is sold in Sumatra and Borneo by persons authorized to deal in it, and a fine of 50 dollars is imposed on any person found selling it illicitly. So far back as 1708, the king of Sumatra limited the importation of opium to three chests, each containing 160lbs. weight, and if any person were found smuggling this drug, his goods and life were forfeited.

Among the Celebes, opium is used in great quantities. Even the Rajah and his family are constantly in a state of stupidity from its use, and uniformly refuse to admit strangers during the time of its influence. At Penang, 28 chests of opium are annually imported for the Malay and Chinese inhabitants; and to retail this drug, the farmers pay to the East India Company from 3000 to 4000 Spanish dollars per month; which license, with the prime cost of the article, causes the consumer to pay dearly for it.

* Anderson's Mission to the East coast of Sumatra, 8vo. p. 209.

The people of Java indulge to excess in the use of this drug. Upon such of them, as well natives as slaves, who have become desperate by the pressure of misfortune or disappointment, it operates in a frightful manner, giving them an artificial courage, and rendering them frantic, in which state they sally forth, in all the horrors of despair, to attack the object of their hatred, crying *amok ! amok !* which signifies kill ! kill ! Thus infuriated, they indiscriminately stab every person they meet, till self-preservation at length renders it necessary to destroy them. This is what is termed *running a muck.* Captain Beekman was told of a Javanese, who run a muck at Batavia, and had killed several, but being met by a soldier who ran him through with his pike, such was the desperation of the wretch, that he pressed forward on the instrument of death, until he got near enough to stab his adversary with a dagger, when both expired on the spot. It is common amongst the Indian soldiery, when about to perform some daring act, to intoxicate themselves with opium, in such a manner as to render them reckless of danger.

It is a curious law in Java, that any one crying *amok* may be destroyed ; but, in the event of its being a false alarm, and an individual being killed by the crowd, the person that exclaimed *amok* is only liable to be fined. At Batavia, if an officer take a person calling *amok,* his reward is very considerable ; but, if he kill him, nothing is awarded: such is the frenzy of those unfortunate beings, that generally, three out of four are destroyed in the attempt to secure them. Some are of opinion, that the sanguinary achievements effected when running a muck, for which the Malays have been famous, or rather infamous, are more owing to the inherent ferocity of their nature, than to the influence of opium, or any other drug. But it is to be feared, that tyranny and oppression have too often driven them to seek a fallacious consolation in the use of this article, rendering them desperate and reckless of consequences. The Javanese government farm the privilege of vending opium in a medicated or prepared state. When the supplies were regular, the cost to the consumer was about 3,500 Spanish dollars per chest, or £787 10*s.*, being an advance on the market price of 133$\frac{1}{3}$ per cent, upon the monopoly price of Bengal, of 168$\frac{1}{2}$ per cent., and upon the first cost, that of 3025 per cent. Were the duties fairly collected in Java, it is computed, that the net revenue would be £225,000 sterling. The opium sent from Bengal, to the different Indian islands, was, at one time, nearly 900 chests annually, 550 of which were consumed in Java ; but the extent of the consumption, like other articles, greatly depends on the price. When the retail price was about 5000 Spanish dollars a chest, the

consumption was only 30 chests per year ; when 4000 dollars, it was 50 chests a year ; and when 3,500, it increased to nearly 100 chests annually. When the price was moderate, many used it who had never done so before ; when it was extravagantly high, several, who had used it moderately, desisted from it altogether, while those, whose habits were confirmed, had recourse to other stimulants, as substitutes. The introduction of Turkish and other opium, into the Indies, has caused a great revolution in the sales of this drug ; and the American and other free traders, it is thought, will eventually put an end to the monopoly of the East India Company. This opinion is confirmed by the fact, that a chest, which formerly sold at from 1,200 to 1,500 dollars, fell lately to 800, and since that, the sales, at Calcutta, have fallen upwards of 30 per cent. Before the East India Company commenced dealing in opium with the inhabitants of Sumatra, Malay, and other places, Mr. Lucas, a factor in the service at Java, had monopolized the whole trade, and secured to himself a property of £100,000. This beneficial traffic was not known to the Dutch before 1685, when Lucas disclosed the secret.— Soon after, a society was formed at Batavia, for the purpose of conducting the opium trade. The stock of the society was divided into shares of 2000 rixdollars each. Such was the prosperous state of the business, that the shares were soon sold at a high premium. The affairs of this company were under the control of a director, two acting proprietors, a cashier, and book-keeper. Every chest of opium delivered to them, by the East India Company, stood the society 500 rixdollars, or upwards ; and such were the regulations, that they were obliged not to sell to any others who might come in competition with them. The profits of the society, on every chest, were calculated at 8 or 900 rixdollars. To prevent smuggling, the society took every precaution ; and in order to make their monoply more secure, they interdicted the trade to their servants, and particularly to the seamen, who were prohibited from dealing in it, on pain of death; besides, ships and cargoes were confiscated, when opium was found on board. Notwithstanding all these regulations, the temptation was so great, that vast quantities were conveyed into various parts of the East, to the injury of the monopolists. The sale of this drug produces to the Dutch a revenue of 1,120,000 rixdollars ; but the abuses, which the monopoly engendered, brought the trade under the review of the commissioners, who, in 1803, sat at the Hague, to examine into the affairs of Java, and they found it necessary to limit the sale of it to 1,200 chests. Upwards of 100,000lbs. weight of opium were annually imported into this island from India, whence it was transmitted to the Moluccas, and the other eastern parts of Asia.

Vast quantities are consumed by the crews of the piratical vessels, in the Indian Ocean, which are principally composed of Malays.—When they are about to engage in any desperate enterprise, they infuriate themselves with opium, in order to strengthen their courage and inspire them with a determination to give no quarter. Unfortunately, too many temptations, for acts of this description, present themselves in those seas, which have been the means of stamping a character on these people, that will require a long lapse of time to eradicate.

The Rajpoots, Gracias, and other Hindoo tribes, present opium at their visits and entertainments, with the same familiarity as the snuff-box in Europe.* As they are strongly addicted to this drug, they indulge in it to great excess, but they seem to be less affected by it than Europeans ; which some attribute to the simplicity of their food, and the use of no other stimulant. Their women are also in the habit of using it, and even administering it to their new-born children ; and it is deemed by both sexes, as constituting one of the chief pleasures of existence. Many of these poor creatures, who undergo voluntary tortures from religious motives, use opium in order to allay the poignancy of their feelings. Heber saw a man having a small spear through his tongue, who was so stupified with opium, that he appeared insensible to pain. The parts through which the spear was thrust, are said to have been rubbed till numbness ensued, and rendered them callous.† The Rajpoot princes seldom hold a Durbar, without presenting a mixture of liquid opium termed *kusoombah*, to all present. The minister washes his hands, after which some of this liquid is poured into the palm of his right hand, from which it is drank, by the highest in rank present. He washes his hand again, and pours more liquid into the palm for the second in rank, and so on till all the company are served. In settling quarrels, the parties drink this liquid from the palms of each others' hands, as a pledge of the most sacred friendship.‡ The Rajpoots are remarkable for taking opium on a day of battle ; at this time they double the dose, which, says Bernier, makes them insensible to danger, and to fight with the ferocity of tigers. They never yield, but front the enemy like a wall of brass ; and before entering on the contest, embrace one another like brothers, resolving to conquer or die.§ To all classes in those regions, opium, whether smoked, eaten, or drunk, affords recrea-

* Forbes's Oriental Memoirs.

† Heber's Journal, &c.

‡ Malcolm's Central India, vol. ii. p. 146.

§ Bernier's Voyage to the East Indies.

tion and enjoyment. The Halcarras, a description of persons who carry letters and run messages through the provinces of India, with a small piece of this luxury, a bag of rice, and a pot to draw water from the wells of the charitable, perform incredible journeys; while the messengers of Turkey, in like manner, with a few dates, or a lump of coarse bread, traverse the trackless desert, amidst privations and hardships only supportable under the influence of this fascinating drug. The Pattamars, or foot messengers, who travel between Surat and Bombay, use opium, in order, they say, to fortify their minds, and increase their strength; by this means, they will keep running, and at the same time apparently dozing, without feeling the fatigues of the way. The labouring classes, especially the hamals, or porters, use immense quantities of it, and will carry loads, much heavier than those usually borne by the stoutest Europeans. Some of them have been known to swallow above an ounce of opium at a dose, under the pretence, that it supports and strengthens them during the heat and toils of the day.* "I once saw," says the author of the Memoir of an officer in the East India Company's Service, "a wretch extended on the ground, with glazed eye and sunken features, apparently in the last stage of existence, with only just strength enough to mutter prayers for a supply of opium. Some was given him by a passenger. I waited to see its effects. They were truly magical.—From the time he swallowed it, his lamp of life seemed to rekindle; in a few minutes his features became flushed and animated; he rose up on his haunches, twisted his mustachios, sprung upon his feet, seized his wallet, and trudged off as quick as a lamp-lighter." It is related of a Turkish messenger, who coming from Constantinople, to a merchant at Smyrna, on entering a gentleman's house, fell down in a state of insensibility, at which, while the whole family were surprised and concerned, one of the servants rightly judging that this swoon was occasioned by the stock of opium laid in for his journey being exhausted, forced a little of the drug into his mouth; and by this means he revived, and acknowledged that the servant had preserved his life.

Aureng-Zebe and other tyrants used a preparation of opium, called *poust*, to despatch such as were hostile to their interests, and whom they could not openly destroy: thus it was, that this despot carried off his nephew Sepe Chekauh, his brothers Dara and Morad, his son Mahommed, and others of his relations in the fortress of Gualior in the Mahrattas. The manner of effecting this was, by administering a cup of this fatal drink, in the morning before eating any thing, which

* Grose's Voyage to the East Indies, vol. i. p. 119.

produced loss of appetite, weakness, and insensibility, till, becoming debilitated both in body and mind, they gradually grew torpid, and passed into the other world, unconscious of sickness, care, or the fears which approaching dissolution usually inspire: through this means, many of the native princes of India perished ingloriously.* In the same way, it is said, that Shah Abbas gave a pill of opium, every morning, to Sain Mirza, his grand-son, in order to stupify him, and render him less agreeable to his subjects; he being jealous, and fearing that he might have too much influence with his courtiers.—To counteract this, the mother of the young prince made him take treacle, and other antidotes.

Doctor Poqueville, in his Travels through the Morea, gives a minute account of the opium eaters termed Theriakis, an appellation by which they are designated, in consequence of their being extravagant and irregular characters. "They begin," says he, "with only half a grain, and increase the dose, as they may find it to produce the desired effect. They take care not to drink water after it, as that would bring on violent colics, but the man who, at twenty, takes to opium, seldom lives beyond the age of thirty or thirty-six. In the course of a few years, the dose is increased to upwards of a drachm, or sixty grains. At this time, a pallid countenance and extreme leanness announce a state of cachexia, which is only a prelude to a general marasmus, or consumption of flesh. The infatuation is so great, that the certainty of death and of all the infirmities which lead to it, is incapable of correcting a theriaki, or a person addicted to the use of opium; he coldly answers, any one who apprizes him of his danger, that his happiness is incomparable, when he has absorbed his pill of opium. If he be asked to define this supernatural felicity, he only says that it is impossible to describe it, as it is a pleasure not to be explained. These miserable beings, however, towards the close of their life, or rather of that state of stupefaction, into which they are plunged, experience the most severe pains, and a continued hunger; they are tormented by a desperate *satyriasis*, without the capability of satisfying their desires; in short, they experience pains which even the delicious paregoric cannot assuage; and having become hideous, deformed by numerous periostoses, deprived of their teeth, their eyes sunk into their head, and afflicted with an incessant trembling, they cease to exist a long time before their life is at an end.† The Baron De Tott, writing on the same subject, gives a miserable picture of those who frequent the opium market, at Constantinople, describing

* Bernier's East Indies.

† Dr. Poqueville's Travels through the Morea, Albania, &c. 8vo. p. 132.

them as having pale and melancholy countenances, with meagre necks, heads twisted to one side, backbones distorted, shoulders drawn up to the ears, and other extraordinary appearances. Seated in the twilight of the evening, or reclining on sofas in the little shops, ranged along the walls of the mosque of Solyman, may be seen the infatuated theriakis swallowing their opium pills, in proportion to the degree of want, which habit has rendered necessary. Each poor votary anxiously awaits the agreeable reverie that is to follow, as the effect of this indulgence. He soon retires to his home, full of an imaginary happiness which neither reason nor the realities of life can procure; and in this manner, each succeeding day witnesses a repetition of the same irregularity, till, worn out with debility and intemperance, he, at last, sinks like a shadow into the grave. In addition to these observations, the following anecdote will be read with interest :—An English ambassador, lately sent to a Mahometan prince, was conducted, upon his arrival at the palace, through several richly-decorated and spacious apartments, crowded with officers arrayed in superb dresses, to a room, small in dimensions, but ornamented with the most splendid and costly furniture. The attendants withdrew. After a short interval, two persons, of superior mien, entered the saloon, followed by state-bearers, carrying under a lofty canopy a litter covered with delicate silks, and the richest Cashmere shawls, upon which lay a human form to all appearance dead, except that its head was dangling loosely from side to side, as the bearers moved into the room. Two officers, holding rich fillagree salvers, carried each a chalice, and a vial containing a black fluid. The ambassador, considering the spectacle to be connected with some court ceremony of mourning, endeavoured to retire; but he was soon undeceived by seeing the officers holding up the head of the apparent corpse, and, after gently chafing the throat and returning the tongue, which hung from a mouth relaxed and gaping, pouring some of the black liquor into the throat, and closing the jaws until it sank down the passage. After six or seven times repeating the ceremony, the figure opened its eyes, and shut its mouth voluntarily; it then swallowed a large portion of the black fluid, and, within the hour, an animated being sat on the couch, with blood returning into his lips, and a feeble power of articulation. In the Persian language he addressed his visiter, and inquired the particulars of his mission. Within two hours this extraordinary person became alert, and his mind capable of arduous business. The ambassador, after apologizing for the liberty, ventured to inquire into the cause of the scene which he had just witnessed.

" Sir," said he, " I am an inveterate opium-taker ; I have by slow

degrees fallen into this melancholy excess. Out of the diurnal twenty-four periods of time, I continually pass eighteen in this reverie.—Unable to move, or to speak, I am yet conscious, and the time passes away amid pleasing phantasies; nor should I ever awake from the wanderings of this state, had I not the most faithful and attached servants, whose regard and religious duty impel them to watch my pulse. As soon as my heart begins to falter, and my breathing is imperceptible, except on a mirror, they immediately pour the solution of opium into my throat, and restore me as you have seen.—Within four hours I shall have swallowed many ounces, and much time will not pass away, ere I relapse into my ordinary torpor."

When Macfarlane* was travelling in Turkey, he entered into a bazaar at Gallipoli, the proprietor of which he found labouring under the influence of the madjoom, or opium. He is described as an old man with a white beard, sitting on a table with his arms crossed over his knees, his head sunk beneath his shoulders, and his eyes fixed in a vacant, immoveable stare. To a demand for an *okka* of tobacco he made no reply; the words seemed to have struck the ear of a statue; his eyes remained fixed and motionless; nor could any object be procured to attract his attention except the white wall opposite, on which hung a *pisgillah*, the name of God in Arabic characters. Conceiving that he was praying, he was pulled by the sleeve in order to rouse his attention, which having no effect, it was bawled into his ear that an *okka* of *latakia* was wanted. By this means, his attention seemed awakened for a moment, a wild unmeaning smile stole across his countenance, an unintelligible word or two escaped his lips—and in an instant he became fixed and abstracted as before. Every future effort to arouse him proved unsuccessful, and he remained wrapped up in the enjoyment of the visions that his intoxicated fancy had created. It is thus that in many parts of the East, the old men and dervises who have, by irregularities in early life, blunted and enervated the finer feelings, endeavour to revive them by the use of opium, a drug which, sooner or later, annihilates all the faculties of the rational man, leaving nothing behind but a mouldering temple, and a loathsome ruin.

The sedative influence of opium is less observable among the Turks, than it would be were the people more active, and had less leisure to indulge in habits of idleness. Even during the time they devote to smoking tobacco, they seldom open their lips except to exhale the fumes of their pipes. A striking proof of their perseverance in this lethargic and stupifying custom is related by a gentleman, who was eye-wit-

* Constantinople in 1828.

ness to the fact of two Turks sitting cross-legged upon a straw mat before a door in their loose gowns, exposed to an intense heat. In this way, they remained for three hours and a half without once uttering a syllable, looking at each other with the same immoveable, yet unmeaning gravity; hence travellers may very readily mistake the use of tobacco among them for that of opium, as both are indiscriminately used in smoking, and may, to superficial observers, appear to produce similar effects.

Although opium seems to induce stupor or insensibility, as evinced by a heavy look, yet the appearance is deceptive, if we believe various anecdotes related on the subject, of which the following is an illustration. A Gentoo rajah and a governor of Surat, attended by their respective officers and guards, met by appointment in a garden near the city to arrange some affairs of state; while conversing, the governor observed that the soldiers of the rajah squatted down and appeared as if nodding or sleeping on their naked swords. Turning to his friend he remarked, "you must have a very just opinion of my good faith, since you would venture yourself to an interview with me with guards so overcome by the influence of opium." "In that you are mistaken," said the rajah, "and you may easily put the matter to the test by directing one of your attendants, for whom you have little regard, to pluck a flower out of the turban of one of my drowsy soldiers." A person, deputed for that purpose, proceeded with all possible caution to one who appeared the most overcome; but scarcely had he put his hand on the flower, when his arm was severed from his body, and all the rest of the guards were on foot in an instant.*

The effects of opium might be exemplified in many ways, but I do not recollect a more singular one than the following mentioned by Mrs. Gutherie, who, writing to her husband from Eupatoria, remarks, that she observed at a Tartar mosque a sort of holy wheel composed of whirling fanatics, who, having indulged in the use of opium, kept flying round a circle, more like the votaries of Bacchus, than the disciples of Mahomet. In the middle of the circle, an aged dervise hurried round like a top, muttering all the while, in concert with his brethren in the circle, the following maxim from the Koran, "This life is precarious; but it is here, (pointing to the earth,) that we must take up our abode." The centre of this curious group is always the place of honour and of danger, as the reverend father, who occupies it, in right of his years and wisdom, keeps spinning round, till he turns his brain, and if he expire on the spot, which sometimes happens, he becomes a martyr saint of the Mahometan church, and the envy of his

* Grose's Voyage to the East Indies.

surviving stronger-headed companions.* It is related of Lord Tyrawly, that during his residence in India, in order to punish inebriety among the troops under his command, he invented a machine similar to that of the Tartars, having a rotary motion, and which served to sober such drunkards as were subjected to its rapid evolutions. This effect was caused, it is supposed, by the violent shock sustained, by suddenly stopping the machine at intervals, that being the invariable practice, until the individual appeared to be in the full exercise of his reason.

That the juice of the poppy in its natural state has any inebriating quality, has been questioned; but Grose relates a circumstance, which, if true, would lead to the conclusion that it possesses powers highly narcotic, deleterious, and dangerous. A young gentleman belonging to an English factory, while amusing himself in the garden of a Nabob with whom he was spending the day, thoughtlessly pulled a poppy and sucked the head of it, not apprehensive that it possessed greater power than those plants usually have in England. The consequence was, he fell immediately into a profound sleep, with which, when the nabob became acquainted, he eagerly inquired from what bed the poppy had been taken that produced this effect. On this being pointed out, he said, he thought the nature of the poppy in India was too well known to have required from him any caution against it, particularly as the taste was by no means tempting, and lamented that the young gentleman was so unfortunate as to pitch on this description of poppy, it being of so deadly a nature as to admit of no human remedy or antidote, as nothing could awake him from that sleep, which unhappily proved his last.

The Lion, it is said, is sometimes taken in India, after having satisfied his hungry appetite on the flesh of an ass surcharged with a quantity of poppies, and previously put in his way, that by feeding on it, the narcotic power of the plant might overcome him, and render him an easy prey to the hunter. The truth of this has been questioned, but there can be scarcely a doubt that the poppy, if taken internally, would have a deleterious or overpowering effect, and it is certain that the leaves, which are used in Persia as pot-herbs, will not be employed for that purpose, after a certain stage of growth. The effects of the poppy on the lion will not appear so incredible, when it is known that hyenas are destroyed, in the settlement of the Cape of Good Hope, by feeding on lambs poisoned by the fruit of a small tree called *hyaenanche*, which grows in Caffraria, and different parts about the Cape. In order to kill those animals which are so destructive to the

* Tour in the Crimea, 4to. Letter xviii. p. 65.

flocks of the settlers, the fruit of the *hyaenanche* is pounded and mixed with the food given to lambs, after which it is placed in the paths of the hyenas; and these ferocious beasts, fastening on it with insatiable appetite, soon fall victims to the insidious venom of the plant so craftily administered for that purpose.

Medical men assert that opium has a greater effect on carnivorous than on graminivorous animals, since a rabbit can take a considerable portion of opium without any fatal consequence, when half the quantity would destroy a dog. The jockies of India have recourse in the sale of horses, to tricks with opium, unknown in Europe. Captain Skinner, in his Excursions in India, relates, that a pony was brought into the camp near Cawnpore, for sale, and it appeared so gentle that it was eagerly purchased, being pronounced the most tractable of its race. Two days after its purchase, there was not a man to be found that could ride it. The reason was, it had been drugged with opium, and though a most wicked and obstinate creature, its vices were perfectly subdued during the time it was under the influence of this opiate.

How this inebriant affects the animal system is a matter yet undetermined; whether it is by action on the nerves, or by absorption into the blood: but the recent and generally-received opinion is, that it enters the blood-vessels, and produces on their inner coat an impression which is conveyed along the nerves to the brain;* and experiments have proved that, when directly introduced into the blood, its effects are most energetic as a poison. Vinegar, lemonade, and other acids, have been administered to counteract the effects of opium, but antidotes of this kind are little to be depended on, unless in certain cases, and should always be used in conjuction with an emetic. The application of the stomach-pump is, perhaps, the most effectual means of removing this baneful material.

The leaves of the hemp plant, *(cannabis sativa,)* known in India by the name of *beng* or *bangue*, are often substituted for opium with the same familiarity and effect. Ray says that *beng* is the produce of a different plant which grows in Hindostan and the neighbouring countries: perhaps he alludes to the *datura stramonium*. But as the natives in those parts are well acquainted with its inebriating powers, and as in some places hemp is alike known by the name of datura and cannabis sativa, the botanist may have fallen into a mistake. The people of the East use it differently; some take it as an electuary, while others either smoke or chew it. *Beng*, by many of the sects in India, is used, as opium is by the Turks, to produce inebriation, as

* Christison on Poisons, p. 613.

they cannot legally, or without the risk of losing caste, drink spirituous liquors ; and hence they are even permitted to take *ganja*, *beng*, or hemp leaves, with impunity. The Sikhs of India do not smoke tobacco, but they are allowed to chew *beng* and drink spirituous liquors. The *kief*, which includes the flower and seeds of the plant, is the strongest; and a pipe of it, half the size of a common English tobacco-pipe, is sufficent to intoxicate. Among the Moors, it is usually pounded and mixed with *el mogin*, an invigorating confection which is sold at an enormous price ; a piece of this, as big as a walnut, will, for a time, entirely deprive a man of all reason and intellect.* This, which the traveller Ali Bey calls *kiff*, is commonly made use of by boiling, having been previously dried and nearly reduced to powder. It is often mixed with sweetmeats, or swallowed in the form of pills. The plant is sometimes boiled with butter in an earthen pot for about twelve hours ; it is then strained, and afterwards serves to season their victuals.† Brook has fallen into an error in believing that the keef is the common hemlock ; the flower, he says, is called *el keefe*, and the leaves *hascischa*. In Morocco, he adds, the plant is reduced to powder, and the quantity of two or three spoonfuls generally taken with the addition of sugar and water. It is also prepared with butter, honey, and sugar, made into a sweetmeat, most of which the Moorish ladies sometimes eat. Those who indulge in the use of *keefe* are distinguished by their sallow-jaundiced complexion, and its effects are usually those of a slow poison. Many of the Indian nobles and military officers take it in the powdered state, and add to it an *areca* or green hazel-nut with a little opium and sugar ;‡ and, to make the visions it occasions the more lively, they mix with it some camphire, cloves, nutmegs, and mace, and not unfrequently ambergris and musk. Rhumpius says, that it is sometimes taken in a liquid form mixed with *areca* and *pinanga*. This plant is very aptly called by the Malays, *jingi*, or the "*herb of fools*." Another description of bangue is made from the leaves of the *hibiscus sabdariffa* and also used in India. The *cannabis sativa* is used in Egypt as an aphrodisiac and narcotic ; the Arabs use a preparation of its green leaves for the purpose of exhilaration. General Menou, when in Egypt, was obliged to prohibit the use of its seed among the French soldiery, and we find that, in the time of Galen, cakes were made, infused with this seed, and served up after supper to encourage drinking ; but, when eaten too freely, they affected the head. In the Barbary states, it is preferred to opium from the voluptuous sensations which it never fails

* Jackson's Account of Morocco, p. 78, 79.

† Travels of Ali Bey, vol. i. p. 81. ‡ Vide Acosta. p. 290, c. 54.

to produce. The *hashisha*, or leaves of the plant, are mostly dried and cut like tobacco, with which they are smoked, but the luxurious generally smoke them pure. The nuts of the *palma christi* have the same effect, and the intoxication produced by them exists for some hours, while during their influence the person affected talks without reserve or reflection.

In the Nepaul territory, according to Hamilton, the extract of the cannabis sativa is denominated *charas*. The dried leaves have the name of *ganja* and are said to be of a heating quality, but are not so much used as the juice or extract. The best charas is procured by making incisions in the stem of the plant, and collecting the exudations. From the bruised or pounded stalks of the hemp, a coarser sort of charas is prepared; the strongest and best article of this description is made in Thibet. Doses of *charas* are taken in pills of from ten to twelve grains and smoked like tobacco. The *ganja* or dried leaves are used in the same way, and both produce the same inebriating effects. The inhabitants of those countries are passionately fond of the charas, and indulge in it to excess. It produces all the effects of opium, and is sometimes attended with the same fatal consequences. Its habitual votary becomes first stupid, weak and debilitated, but never irrational, though apparently so; next he labours under thirst, and, in order to allay it, he is induced to repeat the cause of his malady, and thus proceeds till death in a short time puts a period to his infatuation. While charas has this fatal effect on some, it produces different effects on others: it has been known to cause a total deprivation of sense, and to subject its votary to incarceration in a madhouse for life. Mr. Crawford tells an anecdote of the effects of the datura or charas on a Javanese boatman, who, while proceeding in his canoe up a river, was accosted by a Chinese from the bank, requesting a passage, offering payment and a share of refreshments. The boatman received him cordially, and ate heartily of the viands. These, which had been previously mixed with the datura, immediately caused stupor and profound sleep. When the victim of this piece of knavish artifice awoke, he found himself lying naked in a forest, fifteen miles distant from the place where he had taken in the Chinese, robbed of his canoe and all his property. The rogue was shortly afterwards apprehended, obliged to confess the fact, and make restitution.

The datura, or ganja, is well known over the East as an intoxicating plant, and is, in many places, called gunja. Captain Dillon relates that, in his passage to Van Dieman s Land, in 1827, he was one day alarmed by the fall of a Lascar, from the upper deck of the ship into

the hold, and found that the accident was occasioned by smoking this plant. On examining the chest of the individual, a large parcel of this deleterious plant was discovered and thrown overboard, to the great vexation of the voluptuous Lascar, who had secreted the article as a solace for his care and anxiety on the voyage.* To a very intoxicating drug called *bung*, the Persians are said to have been early attached, even so far back as the first century of the Hegira, and its strength is represented as being so great, that it was never taken in a quantity larger than a pistachio nut. It was employed to banish lowness of spirits, excite cheerfulness, and renovate the mind; but what this drug really was, there is no certain information: it is generally believed to have been datura or charas. In many places, the preparation of *bung* or *beng* goes under the name of majoon; and in the Persian empire a confection of this nature is so denominated, as it produces the same effects as opium. Among the hills at the foot of the Himaleh mountains, the herb *bhang* or beng grows spontaneously, and in its prepared state it meets with a ready sale. Fraser, in his tour, says that when tobacco cannot be procured for smoking, its place is supplied with bhang and other substitutes of an intoxicating nature, and a number of expedients are made use of when a *hubble-bubble*, or a machine for inhaling its fumes, cannot be had. He observed that a refreshment of this nature is indispensable for the *cooleys* on the march; and when allowed to smoke a *chillum*, and take a draught of cold water, they were enabled to proceed with vigour; but whenever they were deprived of the means of inhaling the smoke of this stimulant, and quenching their thirst, they were at times unable to pursue their journey from exhaustion; the force of habit having rendered such renovation absolutely necessary.†

During the severe campaigns of the late war, the French surgeons were in the practice of administering opium and Cayenne pepper to the fatigued soldiers, with a view of recruiting their strength, and exhilarating their spirits, and they found them to have the most salutary effects.

Burckhardt saw in Syria the hemp plant cultivated for smoking, on account of its intoxicating qualities. The small leaves, which surround the seed, are laid upon the tobacco in the pipe to produce a more inebriating effect. The same custom prevails in Egypt, where the hemp leaves, as well as the plant itself, are called *hashysh*; and the Egyptians are even said to prepare from it an intoxicating liquor; and also by pounding the seeds a description of paste is made to effect the same object. In India, a drink called *brug* is made from hemp,

* Dillon's Voyage to the South Seas. † Fraser's Journal, p. 217.

which is also partially used by the Circassians. To form this beverage, the hemp plant is taken while in seed, and, when dried and reduced to powder, it is suspended in a small bag in a vessel full of water, by which the strength is extracted. This water, when sweetened with honey, produces intoxication.

The natives of Madagascar chew the leaves of hemp, as well as tobacco, which produce a narcotic effect, and they smoke another plant resembling hemp, known by the name of *Ahets-manga*, which causes drunkenness approaching to madness, the eyes assuming a fierce, fiery look, and the countenance becoming wild and ferocious. Like the slaves to opium, those accustomed to its baneful effects are stupid and inactive when its influence has ceased to operate; and hence they are obliged to have constant recourse to a repetition of the ingredient. The *Ahets-manga* rises to about five feet in height, bearing a pod containing nearly a dozen of seeds, and carrying a long slender leaf. The *Jermaughla*, mentioned by Drury, appears to be the same as the ahets-manga, since the description and their effects are exactly alike. The seeds of the jermaughla are exposed to the sun, for three or four days, till quite dry, and in that state are used. The pipes, employed in smoking, are made of reeds or small canes; but sometimes a long shell is used as a substitute. An European, who had the curiosity to smoke a pipe of these seeds, was so intoxicated, that his head remained giddy for three days, and it caused such a sickness, that he never could be induced to do so a second time. The natives are so fond of it, that they smoke it with the same pleasure and avidity that our countrymen smoke tobacco.*

The drug called *Chirs*,† so much used among the people of Caubul to excite intoxication, is made from the *cannabis sativa;* and the practice of chewing it is carried to some extent in Beloochistan and Sinde.‡ The quantity taken at a time varies in proportion to the habits or constitution of the individual. A drachm is a moderate dose; but when we consider that this quantity is sufficient for twenty persons unaccustomed to its use, we may conclude that its effects must be powerful. Garcias mentions a woman, who took ten drachms of opium, daily; and although she appeared heavy and sleepy, she could dispute learnedly on any subject. It is a remarkable property both of opium and bangue, that while they give a heaviness to the looks, they are productive of great watchfulness. Doctor Edward Smith, while at Smyrna, took pains to observe the doses of opium

* Drury's Account of Madagascar, 8vo. p. 218.

† Elphinstone's Account of the Kingdom of Caubul, 4to. p. 263.

‡ Pottinger's Travels, 4to. p. 63.

taken by the Turks in general, and he found that three drachms were a common quantity among the larger takers of it, but that they could take six drachms a day without danger. A Turk ate this quantity in his presence, three drachms in the morning and three in the evening, which had no other effect than that of producing great cheerfulness.

At Djidda, in the Hedjaz, Burckhardt found amongst the shops one frequented by the smokers of hashysh, a preparation of hemp flowers mixed with tobacco, which produced intoxication. The better classes, he says, eat it in a kind of jelly or paste prepared in the following manner : a quantity of the leaves of the hemp, after being sufficiently boiled with butter, is put under a press ; the juice is then expressed, mixed with honey, and sold publicly in the shops held for that purpose. The hashysh paste is termed *bast*, and the sellers *basty*, (i.e. cheerfulness.) Persons of the first rank use *bast*, in some form or another, to exhilarate the spirits, as it produces all the effects of opium. Even in the Holy City, Mecca, there is a coffee-house, in which are sold preparations of hashysh and bendj, and which is frequented by an inferior description of people. On these articles, a heavy tax has been imposed in order to discourage their sale, but with very little effect.*

The Turks, besides opium and bangue, use *peganum harmala*, or the seeds of *Syrian rue*, with which, as Belonius relates, the emperor Solyman kept himself intoxicated. The seed of the *datura stramonium*, or thorn apple, is also much employed by them, as well as by the mountain villagers, in the province of Sirinagur and other parts of India, who use it to increase the intoxicating powers of their common spirituous liquors. The *datura ferox*, so common in China and Thibet, is employed in Bootan as a powerful stimulant, and its narcotic virtues are well known to the inhabitants of all those countries.

Penang, or *betel*, is in great demand all over the East. The Indians chew it at all times of the day and night ; like tobacco, it has rather an enlivening quality ; though naturally of a bitter taste, yet when wrapped round an areca-nut, or mixed with *chinam*, a species of burned lime made of shells, the flavour is not so disagreeable. The rich and sensual frequently add perfumes, conceiving it a powerful incentive to love. The *betel*, it is said, is used for preserving the gums from becoming foul, giving a sweet breath, fastening the teeth, but more frequently for reviving the spirits. It causes an excess of saliva, and, to preserve cleanliness, a spitting-box is always kept in the apartments of those who chew it. These boxes are frequently richly

* Burckhardt's Travels in Arabia, vol. i. p. 288.

ornamented, but the cases in which the betel is enclosed are usually made of gold, silver, horn, or some valuable wood, inlaid with precious stones. In Siam, the king commonly makes his attendants presents of these betel-boxes, which are returned to him at the death of the individuals. The contents of one of those boxes consist of cut areka, betel leaves, lime, and tobacco, together with a small gold handled knife for cutting these materials. Notwithstanding the partiality of the Siamese, and some other orientals, for betel, yet many of them loose their teeth by its use, and their tongues become often ulcerated from its influence. Many of the Easterns would rather want food than betel, and its use is so general in many places that the very slaves are allowed a certain quantity daily to prevent them from pilfering it.

At the Cape of Good Hope, there is an herb called *dacha*, a species of hemp, the leaves of which are eagerly sought by the slaves and Hottentots, and smoked sometimes alone and at other times with tobacco. This plant has strong inebriating qualities, which sometimes render its votaries mad; and it is estimated in proportion to its intoxicating effects. The settlers cultivate the *dacha* for the use of their servants, and from the attachment of the Bushmen, or wild Hottentots to it, they succeed in retaining them in their service.

In America, some of the native tribes extract a narcotic liquor from the root of a species of poppy, bearing a rose-coloured flower, which as well as the stem, when touched by the hand, leaves an agreeable odour. The plant, says Chateaubriand, which I saw, was destined to adorn the tomb of a savage in his native wilds: the roots procure sleep, and the perfume of the flower, which survives the flower itself, is a pleasing image of the recollections which an innocent life leaves behind in the desert. A species of the Cannabis Sativa, or hemp plant, is cultivated in New Spain, merely for the purpose of smoking or chewing the leaves to excite a narcotic sensation. The Othomacos, a people of South America, were in the habit, before they entered into battle, of maddening themselves with a snuff, made from the grains of *yupa*, to which the most powerful tobacco is inferior, and the most confirmed snuff taker could not bear a pinch of the *yupa*, without sneezing so violently as to threaten death.* Its effects on those people were to make them fearless of all danger, and irresistible in their attacks on their enemies. Peru yields a shrub or small tree, called *coca*, about six feet high, the leaves of which serve much the same purpose as the opium of the East. The leaves of this plant, which are of a pale bright green, are plucked three or four times a

* Southey's History of Brazil.

year, and, after being carefully dried, are packed in small baskets. Many chew those leaves as others do tobacco, and such is the sustenance derived from them, that they frequently take no food for four or five days, though constantly working ; and, while they have a good supply, they feel neither hunger, thirst, nor fatigue, and, without injury to health, they can remain upwards of a week without the refreshment of sleep. Coca proves to the Peruvian the highest source of gratification, for under its influence his imagination presents the most pleasing and fascinating scenes of voluptuousness. Many, to indulge in its use, forsake the rational associations of civilized life, and retire in the evening to the woods to revel in the uninterrupted enjoyment of its magic qualities. Prostrated under a tree, its votary, heedless of the storm, the darkness of night, or the attacks of wild beasts, reposes happy and contented, until the morning awakes him to a sense of his own degradation, and induces him to return home, a frightful picture of unnatural indulgence. When a Peruvian starts on a journey, he carries with him a small leather pouch, for holding *coca*, and a calabash for lime, or ashes of the *molle* to mix with the *coca :* thus equipped a man will undertake to convey intelligence, or letters, upwards of one hundred leagues, without any other provision. These persons are termed *chasquis*, or *chasqueros*, a name given to the conductors of the mails. Men of this description were employed for the transmission of intelligence by the Incas, long prior to the invasion of the Spaniards, and some of these couriers have been known to convey news a distance of six hundred leagues in the course of six days.* What a similarity exists between the practice here and that observed by the messengers in India and Turkey !

The roots of black henbane, or hyoscyamus, are employed as a strong inebriant. Three grains of the extract are considered equal to one of opium, without its evil consequence ; it is thought however not so certain in its operation as that drug, but there are many well-attested instances on record of its amazing effects.† Dioscorides notices its intoxicating powers ; and the anodyne necklaces, still in superstitious use to allay the irritation of teething, are made of the roots of this plant. Wilner, on vegetable poisons, relates the history of six persons, of the same family, who were destroyed by eating at dinner the roots of the hyoscyamus by mistake, instead of parsnips ; several were delirious and danced about the room like maniacs ; one appeared as if he had got drunk, and a woman became profoundly and irrecoverably comatose. With this narcotic, it is stated that

* Stevenson's Narrative, vol. ii. p. 64.

† Christison on Poisons, p. 486.

Hassan Subah, or, as he was called, " The old man of the mountains," institutor of the celebrated heretical sect of the Assassins, continued to secure the devotion of his disciples.—He administered to them doses of this drug, which produced sleep, and, while in that state, had them conveyed into a splendid palace surrounded by beautiful gardens, where they were regaled with whatever could delight the eye, or gratify the appetite. The delusion was continued by a repetition of the dose, until the victims were restored to their homes, under the impression that Hassan had the power of making them partake of the joys of paradise. Of what this intoxicating potion was composed seems doubtful. Marco Polo says the matter was accomplished by a sleeping potion. Von Hammer, in his history of the Asiatics, attributes it to hyoscyamus, others to opium, while Sir John Malcolm thinks the whole an invention of the Mahometans to bring the sect of Hassan Subah into abhorrence. The last opinion seems the more probable, from the circumstance that Hassan enjoined the strictest abstinence from wine, and two of his sons fell victims to the punishment inflicted on them for a breach of the injunction. Nor is it likely, that on the summit of the elevated Allahamout, appropriately termed the " Eagle's Nest," there could be enchanting gardens, murmuring streams, roseate bowers, or conduits flowing with milk and honey, where the vine, the pomegranate, the orange, and the nectarine, intermingled their attractions, as if the whole formed that sensual paradise promised by Mahomet to his followers. Neumann says he knew a preparation of opium, by which a whole room-full of men may be presently stupified, deprived of their senses, and even of their lives, without swallowing a single grain ; and he thinks opium operates much in the same manner as burning charcoal, or as the exhalations of fermenting liquors. By means of soporific exhalations, thieves in China commit great depredations. The houses, seldom exceeding one story, are fumigated with narcotics and charcoal ; when the inmates are overcome by their influence, the robbers easily descend through the tiled roofs, and convey away whatever property comes in their reach, without detection. It is related of a person of considerable wealth, whose premises had been entered in this manner, that he lay as if in a trance, clearly observing the robbers effecting their purpose, yet unable, from the lassitude to which he was reduced, to offer any resistance. Hyoscyamus is to be found in almost every country, growing spontaneously on road-sides and among rubbish. In many botanical gardens, it is cultivated on account of its medicinal properties, and every where gathered by the misguided slaves to opium, when a supply of that drug is scarce, or difficult of procurement.—

The berries and leaves of the *atropha belladonna*, or deadly night-shade, hold, if possible, a more intense control over the mind of their victim, producing symptoms of the most sottish drunkenness, and, if taken too largely, occasion death. To this Shakspeare alludes in his Macbeth, when he says,

> Or have we eaten of the *insane root*,
> That takes the reason prisoner.

A dose of the dried leaves of this plant, reduced to powder, is usually limited to a few grains; but if taken under the form of an infusion in a considerable quantity of water, a scruple has been swallowed in the course of the day. Ray relates, that a mendicant friar, having drunk a glass of wine in which some of this herb was infused, was seized with a delirium and grinning laughter, accompanied by wild and irregular movements, which would have ended in death, had not an immediate and counteracting remedy been applied. The bad effects of the *belladonna* are said to be most powerfully prevented by a glass of warm vinegar. It is stated on the authority of Buchanan, the historian, that the destruction of the Danish army, commanded by Sweno, king of Norway, when he invaded Scotland, was owing to the intoxicating quality of the berries of this plant, which the Scots mixed with the drink that they were obliged to furnish their invaders; for while the Danish soldiers lay under its soporific influence, the Scotch fell upon them and slaughtered so many, that there were scarcely men sufficient left to carry the king on board the only ship that returned to Norway.—Another species of the night-shade, *atropha mandragora*, abundant in Spain, Portugal, Italy, and the islands of the Levant, has wonderful soporific virtues, and is supposed to be the mandrakes, mentioned by Moses, which were brought by Reuben to Leah, and obtained from her by Rachael, under the impression that they would render her prolific. It is also recorded, that the emperor Julian used an infusion of this plant to excite amorous passions. The Turks, in many instances, have yet recourse to it for a similar purpose, as well as for the visionary pleasure it occasions.

The leaves and flowers of milfoil, or yarrow *(achillea)* inebriate, and are used by the Dalecarlians to render their beer intoxicating, Several medical practitioners in Ireland have used them with great success, in the cure of many diseases. Some of the patients in hospitals, who had been addicted to the use of ardent spirits, and afflicted with the *delirium tremens*, or disease of drunkards, when in course of recovery, were so fond of the yarrow tea, that they preferred

it to almost every other decoction.—Clary and Saffron, (*crocus officinalis,*) have the same effect. The last exhilarates the spirits to such a degree, that when taken in large doses, it occasions immoderate mirth and involuntary laughter. Darnel, or *lolium temulentum,** vulgarly known by the name of *sturdy,* when malted with barley, a process which the seeds of it undergo, causes the ale brewed from it to be quickly intoxicating. It produces the same effect when mixed with bread and eaten hot. It is not perhaps generally known, that the seeds of the field poppy, when ground among meal, have caused sleep, and the other affections common to narcotics. Among these inebriants, the inspissated milky juice of the common garden lettuce is considered as powerful in its operation as opium itself. The sedative qualities of the lettuce, *(lactuca sativa,)* seem to have been well known to the ancients, since Venus, after the death of Adonis, is represented as reposing on a bed of lettuces, with a view to repress her grief, and overcome her affections. This will remind the classic reader of its effects on Juno, from the fable of the birth of Vulcan. Besides Cybele, the mother of the gods has been drawn, crowned with a wreath of poppies as a symbol of fruitfulness, shewing that both the poppy and lettuce were regarded by the ancients as possessing peculiar powers of solace and fecundity. From experiments, it has been ascertained, that the opium, drawn from the lettuce, is identically the same as that of the poppy: many are of opinion, that besides diminishing the price of this expensive article, its extraction from the lettuce would prove a profitable species of culture. Hemlock, *cicuta,* or *conium maculatum,* is also a powerful narcotic, possessing intoxicating qualities, and dangerous in its application.—By the juice of this plant, state convicts at Athens were put to death, of whom were the celebrated philosopher Socrates, and the famous general Phocion. Christison, a late writer, is of opinion, that the poison, by which criminals were thus put to death, must, from its activity, have contained more powerful ingredients. But he was not perhaps aware, that, in the southern climates of Europe, the poisonous qualities of hemlock are much more intense than in northern latitudes. M. Steven, a Russian botanist, assures us that the peasants in the Crimea eat it with impunity, after having boiled it in several waters. Conium, another species of hemlock, is inebriating if taken in small doses, and is free from the constipating effects of opium. An extract from the seeds produces giddiness sooner than that taken from the leaves. *Digitalis purpurea,* or Foxglove, has an intoxicating

* This plant is the *zizanion* of St. Matthew, the *ziwan* of the Arabian botanists, the *zuvan* of the Turks, and the *rosch* of the Old Testament.

effect, and operates on the system, by lowering the pulse, restraining the circulation, and sensibly affecting the vision ; while its application in epileptic attacks has often been attended with fatal consequences. M. Richard, in his Dictionary of Drugs, gives an account of the attempts of the chemists, who have endeavoured to isolate the narcotic, or inebriating principle of foxglove, of which it possesses a considerable portion. This is a vegetable to which recourse is seldom had except as a medicine. Leopard's-bane, (*arnica montana*), a plant chiefly found on the Alps, and other mountains of Europe, possesses properties nearly the same as hemlock.— Some of the common people of Germany smoke it, and make snuff of it like tobacco, as it possesses an acid taste, and when bruised, emits a pungent effluvium, which, while it causes sneezing, gives a sensation of giddiness bordering on drunkenness. Betony (*betonica officinalis,*) produces the same effects as Leopard's-bane, when powdered and snuffed, or smoked ; and, according to Bartholinus and Simon Pauli, physician to Christian V., king of Denmark, it affects those who gather it, as they would have been if exposed to the exhalations attendant on the mixing, or tunning of spirits. Wolf's-bane, (*aconitum napellus,*) is likewise of an intoxicating and deadly nature, and has the peculiar quality, when applied to the head, of occasioning a lightness or giddiness, much resembling that produced from spirituous liquors. The plant *epilobium angustifolium*, when infused in water, is a powerful narcotic, and from the pith an agreeable ale is manufactured. This is a ccomplished by drying it first, and then boiling it, in order to collect the saccharine matter, which, when duly fermented, yields a very inebriating beverage. The fruit, or berries, of the *menispermum cocculus*, or, as it is called, *cocculus Indicus*, have considerable intoxicating properties ; and are too frequently employed by brewers as a substitute for hops, and to bring up weak ales or porter to the desired strength. These berries are sometimes used to catch fish, by throwing them into ponds, or reservoirs, and as they eagerly feed on them, they soon become intoxicated, and fall an easy prey to their captors. The Hop (*humulus lupulus*) is soporific, and pillows have been filled with it, to procure sleep. During the illness of George III., in 1787, he received great relief from a prescription of this nature, and Doctor Thompson tells us of a lady who was attacked with fever, and remained perfectly sleepless and delirious for four weeks, but on recourse being had to a hop pillow, she enjoyed an uninterrupted sleep of 14 hours, from which she recovered refreshed, invigorated, and free from delirium. In spring, the young shoots of this plant are eaten as asparagus, and these *hop-tops* are

considered a delicacy, while a decoction of the roots is accounted a good sudorific. In Siberia, the leaves of the *Rhododendron chrysanthum* are infused in water, and denominated intoxicating tea, from their inebriating effects: a weak infusion of it is in daily use among the natives, as a substitute for the tea of China; but its strength is sometimes tried beyond the limits of prudence, or discretion.

The effects of the *Amanita Muscaria*, a species of reddish fungi, or mushroom, plentiful in different parts of the Russian empire, and in Kamstchatka, where it is called *moucho-more*, are familiar. The account of it given by Dr. Langsdorff, a Russian physician, is worthy of recital. The Amanita Muscaria, so called from its power of killing flies, when steeped in milk, though of the most poisonous of our fungi, is used by the inhabitants of the north eastern parts of Asia, in the same manner as wine, brandy, arrack, opium, &c. are used by other nations. It is collected in the hottest months, and dried by being suspended in the open air; some found on the ground, naturally dry, is esteemed as the most powerfully narcotic. The common mode of using it is, to roll it into the form of a bolus or pill, and swallow it without chewing. It is frequently eaten dry, but oftener taken when infused in a liquor made with *epilobium*. It is sometimes eaten fresh in soups and sauces, and in this state loses much of its intoxicating property. When steeped in the juice of the berries of the *vaccinium uliginosum*, its effects are similar to those of strong wine. One large fungus, or two small fungi, is a common dose, to produce a pleasant intoxication for a whole day, particularly if water be drunk after it, which augments the narcotic principle. From one to two hours, after taking the dose, giddiness and drunkenness ensue, cheerful emotions of the mind are the first symptoms, the countenance becomes flushed, incoherent words and actions follow, and sometimes a total want of consciousness. It renders some very active, and proves highly stimulant to muscular exertion. Too large a dose brings on violent spasmodic affections, and such are its excitements on the nervous system, that it renders many very silly and ludicrous. If a person, under its influence, wish to step over a straw, or small stick, he takes a stride or jump sufficient to clear the trunk of a tree; a talkative person can neither keep secrecy nor silence, and one fond of music is perpetually singing. The most extraordinary effect of the amanita, is the change it makes in the urine, by impregnating it with an intoxicating quality, which continues to operate for a considerable time. A man moderately intoxicated to-day, will, by the next morning, have slept himself sober; but, as is the custom, by drinking a cup of his own urine, he will become

more powerfully intoxicated, than he was the day preceding. It is therefore not uncommon for confirmed drunkards to preserve their urine as a precious liquor, lest a scarcity in the fungi should occur. This inebriating property of the urine is capable of being imparted to others, for every one, who partakes of it, has his urine similarly affected. Thus with a very few amanitæ, a party of drunkards may keep up their debauch for a week. Dr. Langsdorff states, that by means of the second person taking the urine of the first, the third that of the second, the intoxication may be propagated through five individuals. The relation of Strahlenberg, that the rich lay up great stores of the amanitæ, and that the poor, who cannot buy it, watch their banquets with wooden bowls, in order to procure the liquor after a second process, is fully confirmed by the statement of Langsdorff, and gives a lamentable picture of the debasement of our species in that quarter of the world.

By experiments made on potatoes, during the manufacture of starch, the water which was drained from the pulp, while in the keive, on being carefully evaporated to an extract, gave out a strong odour of hemlock. Its narcotic powers were put to the test by two persons, one of whom, having swallowed three grains of the recently prepared extract, soon fell asleep, out of which stupor he had to be forcibly awakened, after a repose of twenty-one hours. The other, who took three grains and a half, fell asleep while undressing, and in that state he continued for eighteen hours, till aroused by an accidental visiter. No peculiar consequence followed in either case.

The discovery of Sir Humphry Davy of that species of Gas, termed *Nitrous Oxide*, which has the power of exhilarating the spirits to an extraordinary degree, is not likely ever to be resorted to as an inebriant, particularly in those countries where chemistry is little practised, and it is therefore unnecessary to enter into a description of it.

In Great Britain, opium has been more used as a medicine than as an exciter of the spirits, although its infatuating influence is not altogether unknown in those countries, since the reveries of Asiatic luxury and effeminacy have in too many instances infected the manners and habits of the British people. To what extent an Englishman may be brought to take this opiate, is exemplified in the admirable and well-written "Confessions of an Opium Eater," first published in the London Magazine for October, 1821, and since in a separate volume. In that work, the writer, speaking from the result of a long and profound personal experience, assures us that he had by regular gradation brougnt himself to take no less a quantity than 8000 drops

of laudanum, or 320 grains of opium, per day. The description of his pains and pleasures for the space of seventeen years, and the struggles he underwent to break the charm which kept him spell-bound for such a length of time, are highly interesting and curious. As a specimen of the imagery with which he was sometimes haunted, the reader is here presented with an extract in his own words:—"Under the connecting feeling of tropical heat and vertical sun-lights, I brought together all creatures, birds, beasts, reptiles, all trees and plants, usages and appearances that are to be found in the tropical regions, and assembled together in China or Hindoostan. From kindred feelings I soon brought Egypt and all her gods under the same law. I was stared at, hooted at, grinned at, chattered at, by monkeys, by paraquets, by cockatoos. I ran into pagodas, and was fixed for centuries, either at the summit, or in secret rooms; I was the idol; I was the priest; I was worshipped; I was sacrificed. I fled from the wrath of Brama through all the forests of Asia; Vishnu hated me: Seeva laid wait for me: I came suddenly upon Isis and Osiris: I had done a deed, they said, which the ibis and crocodile trembled at. I was buried for a thousand years, in stone coffins, with mummies and sphinxes, in narrow chambers at the heart of eternal pyramids. I was kissed with cancerous kisses by crocodiles; and laid, confounded with unutterable slimy things, amongst reeds and Nilotic mud.*" All this, and much more, the reader must enter into before he can comprehend the horror which those dreams of oriental manners and customs impressed upon him. The power of this drug affects the imagination with visions of substantial delights, which no other narcotic has ever yet been found to produce; and man under its influence associates, with his own station in life, those pleasurable images which he is led to believe would render him happy. But it may be said, that the usual effects of opium are to raise the spirits and elevate the mind, and when the body is not labouring under disease, it raises the moral affections to a state of cloudless serenity, over which the diviner spirit of our nature is paramount. This effect of the drug continues so long as the constitution is able to bear the ravages of its influence, for its fascinations are such, that, like the wand of a magician, it creates a visionary temple round its victim, and leads him through the mazes of delights, till at length he falls a sacrifice at the altar of his own imagination. Willis, in Pharmacop. Ration. Part i., informs us that he has known a small dose of opium to take so contrary effect upon some constitutions,

* Confessions of an English Opium Eater, 8vo. p. 171.

that they could hardly sleep at all, but that they quickly became worse with respect to their pulse, respiration, and heat; they became more breathless, and could not be restored by cordials, but gradually languished till they died. He also tells us, that by means of opium, he knew several persons who contracted slowness of genius and stupidity, and others confirmed folly. And one man in particular, who, by taking a large dose of laudanum when he was feverish, lost his memory totally.

Many of the middle and lower classes in England are opium eaters; and this taste has in a great measure been diffused through the example of persons retired from the army. Of this class I was acquainted with two persons whose devotedness to opium led them to spend large sums in its purchase. The inroad of its effects was visible in both, sallow and sunken about the eyes, sometimes pensive, sometimes convivial; always in proportion to the time of its operation. Neither could assign a reason for his attachment, but each felt unhappy during its absence; both admitted, but could not describe, the pleasurable sensations it created. One imputed his attachment to it from habits of association, the other to disappointment in a love affair, which, having pressed upon his spirits, led him to try this mighty assuager of care and sorrow. Numbers use it from a notion that it supports nature under the privation of food longer than it could otherwise be sustained, and therefore many are known to be seldom without a piece of it in their mouths. The Turks have an ingenious method of using it to prevent hunger. When obliged by their religion to abstain long from eating, they take three pills of opium at the same time; the first covered with two folds of paper, the second with one, and the third without any: by this precaution the pills dissolve successively and retard the cravings of appetite in proportion. Doctor Jones, in his book entitled "The Mysteries of Opium Revealed," assures us that he knew several persons in England, who were in the habit of taking two, three, four, five, and six drachms daily, and that he heard of one that could take two ounces in a day, a quantity not exceeded, perhaps, in the history of man.* In the Philosophical Transactions, we have an instance of a Mr. Lovelock, who, in a fever, in the space of three days, took one hundred and two grains. Mustapha Shatoor, a celebrated opium eater at Smyrna, took only three drachms of crude opium daily, yet he was so debilitated, that he could not rise in the morning without first swallowing half a drachm. I knew something of the habits of a young lady, who being prevented

* Vide, "Mysteries of Opium Revealed," 8vo. p. 308.

by her friends from an excessive indulgence in ardent spirits, had for a considerable time substituted opium, and, from its constant use, could swallow an ounce of it in the crude state, with as much ease and indifference as a boy would eat licorice-ball. A gentleman of good fortune, in a provincial town in the north of Ireland, had likewise allowed this propensity to gain upon him to such an extent, that he regularly retired in the evening, to the solitude of his apartment, to enjoy the luxury and grandeur of the visions which this favourite paregoric occasions.

From what has been said respecting the infatuating use of this drug, it will appear evident, that it is no easy matter to shake off an attachment to it, when of any standing; indeed it is much more difficult to do so, than for those in this country who have become slaves to spirituous liquors, to divest themselves of their enjoyments. That it has been condemned by its warmest votaries, there is sufficient evidence, and that its consequences lead to pain, anxiety, and death, there is no doubt, yet to get rid of its magic influence requires the utmost exertion. Mr. Dobell, in his Travels, assures us, that he cured two or three of his acquaintance of this mania, by the following method. When the person, says he, who was in the habit of smoking it, wished for a pipe, I gave him a dose of laudanum, nearly equal to the quantity of crude opium that he was accustomed to smoke, which caused him to sleep; and, immediately on his waking, he was made to swallow a glass or two of Madeira with some substantial food. As the laudanum had a less stimulating effect than the opium, by a regular observance of this process, and by reducing the quantity daily, the individual was in a short time weaned from the use of the opium pipe, and readily substituted that of tobacco, so that by this regimen, he soon recovered his wonted strength and constitution. That a person, leaving off the use of opium, requires some substitute, or stimulant, is further illustrated by the striking anecdote related by Acosta and transcribed by Doctor Aliston in the Edinburgh Medical Essays.* "There were," says he, "some Turkish prisoners and Arabian captives in the ship in which I returned from the Indies to Portugal, who had a small quantity of opium concealed and used it only as a medicine. When they had consumed it all, one of them, a Turk of Aden, said to me, since you have the care of the sick, I must tell you, that, unless you give me and my companions opium, we cannot live two days. I denied I had any; the only remedy then, said the Turk, whereby we, who have been accustomed to eat opium, can be

* Vide vol. v. p. 1. art. 12, sec. 3.

recovered, is by a draught of pure wine every morning; though this is very hard and uneasy to us, being contrary to our law, yet, since our health depends upon it, we must submit. By his advice I gave them all wine; they recovered, and in a month's time would take no more wine, and neither needed nor desired opium." Ahmed Khan, governor of Tauris, in the Persian Empire, was so great a slave to opium, that he would be laid up for whole days, in a state of delirium or stupefaction, which was the cause of his dismissal from office. Being a sensible man, and seeing the disgrace this weakness brought upon him, he so far conquered the propensity, that he was restored to his former rank and dignity, and when the French embassy, under General Gardane, was passing through his government, in 1807, he entertained them with a hospitality and splendour becoming an oriental prince.*

Although opium is so destructive to the human constitution, many instances might be brought forward of persons, addicted to the use of it, who lived to an advanced age. One of a curious nature is related of Mahomet Riza Khan Byat, of Shiraz, who had been accustomed to eat every day a quantity of this drug, sufficient, according to the calculations of an English Doctor, to poison thirty persons unaccustomed to it. He was at the age of sixty-eight, when first advised by this Doctor to leave off the practice, or he would destroy himself. Ten years after, when he was met by the narrator of this anecdote, he looked younger and brisker, than when he first saw him.—He enquired for the Doctor, and on being informed that he was in India, "I am sorry," said he, "that he is not here, I would shew him that Christian Doctors are not all true prophets. He told me I should die if I did not diminish my allowance of opium, I have increased it four-fold, since he predicted my demise, and here I am, near four score, as young and as active as any of you." On saying this, he put his horse to full gallop and fired his match-lock, with the ease and precision of a person in the full vigour of life.†

Christison, in his treatise on poisons, records several cases of the length of time that some have taken opium, without very material injury. 1. A young lady, habituated to it from childhood, was in good health at the age of twenty-five. 2. A lady died of consumption at the age of forty-two, though she had taken daily a drachm of solid opium, for ten years of her life. 3. A literary character of about forty-five years old took laudanum for twenty years, with occasional

* Tangcoine's Narrative of the French Embassy to Persia.

† Sketches of Persia, 2 vols. 8vo. vol. i. p. 96, 97. London, 1827.

intermissions, but sometimes an enormous quantity, yet he enjoyed tolerably good health. 4. A lady, who died at fifty, was in the practice of drinking laudanum twenty years. 5. Another lady of fifty, in good health, in the practice of taking opium for many years, used three ounces of laudanum daily. 6. A lady of sixty, gave it up after using it for twenty years, during which she enjoyed good health, and again resumed her former practice. 7. Lord Mar, after using laudanum for thirty years, to the amount at times of two or three ounces daily, died at fifty-seven of jaundice and dropsy. 8. A woman who took, for many years, two ounces of laudanum daily, lived upwards of sixty years. 9. An eminent literary character, now above sixty, and in good health, has drunk laudanum to excess, since he was fifteen, and his daily allowance has sometimes been a quart of a mixture, consisting of three parts of laudanum and one of alcohol. 10. A lady now alive, at the age of seventy, has taken laudanum in the quantity of half an ounce daily, between thirty and forty years. 11. An old woman at Leith, lived to eighty, though she had taken about half an ounce of laudanum nearly for forty years, and enjoyed tolerably good health.—Sir Astley Cooper relates, that he knew persons to take a drachm of opium daily, in divided portions, without any bad effects.*—Notwithstanding these examples in its favour, it is well known, that opium, when applied externally, will produce poisonous effects, and that if injected into the veins of an animal, it will bring on so high a degree of circulation, that it will cause convulsions; how much more fatal then must be its effects when taken internally!—The action of opium is said to be very analogous to that of wine, or vinous spirits; the good and bad effects of both differ little, and it is as common a remark in the Turkish dominions, that, "he has eaten opium," as with us, "he has drunk too much wine." Its attendants are violent head-ache, furrowed brown tongue, high fever, constipation of the bowels, distorted motions in the eyes, pulsation frequently too quick to be reckoned, and finally a respite from its pains in the chambers of death.—Such are the anomalous and distressing miseries which the use, or rather the abuse of opium, has entailed on man, the origin of which may be dated from the commencement of the Mahometan superstition, which, while it forbade our fellow-men even the simple indulgence of an exhilarating and wholesome beverage, has permitted a substitute that has proved too generally deleterious and destructive.

The Chinese government seem latterly to have taken up the

* Lectures on Surgery, &c.

matter with increased interest, seeing the dangerous consequences resulting from the general use of opium in the empire. Several proclamations have been issued, examples made, and every means tried to prevent its importation, but to no purpose.—Where the infatuation is so general, reform is almost hopeless. The following edict, issued by the viceroy of Canton, in 1828, is a sample of the various proclamations that have been published on the subject:—

"The use of drink and food is to introduce harmony into the system: the gulping of luscious things must be with a desire to obtain strength; but if there exist a drug, destructive of life, incessant efforts should be made to keep it at a distance. Having used the drug for some time, the men accustomed to it can by no means relinquish it, their faces become as sharp as sparrows, and their heads sunk between the shoulders, in the form of a dove, the poison flows into their inmost vitals, physic cannot cure their disease, repentance comes too late for reform."

The number of chests imported into China, in the following years, will shew the extent of this branch of commerce, as conducted by private ships from India:—

1832	15,823	Chests.
1833	21,249	...
1834	15,962	...

The imports of opium into England, from Bengal and other places, from 1786, to 1801, a period of 15 years, amounted to 286,271lbs., and the consumption to 247,619lbs. At the East India Company's sales, in 1809, there were 1991lbs. of this drug sold for the immense sum of £2,249. In 1831 and 1832, the quantity entered for home consumption in Great Britain averaged 28,097lbs. per year.

Having thus detailed the most important facts relative to the extent, use, and effects of some of the principal natural inebriants, I shall return to the artificial or chemical part of the subject, more immediately the object of consideration.

Among the inhabitants of that extensive region known by the name of Tartary, a variety of inebriating liquors is found to prevail. To point out the quality of each, with their shades of difference, would be extremely difficult, particularly as the tribes are so thinly and remotely scattered through a territory of 460,000 square miles in extent,* of which the greater part remains as yet but imperfectly known. Koumiss, or the vinous liquor, prepared by fermentation from mares' milk, seems to be the great and leading beverage of the Tartar

* Malte-Brun, vol. ii. p. 36.

hordes. Of its origin we know little, but that it was familiar to many of the nations of Asia, long before they had any intercourse with Europeans, is unquestionable. Caprini, a friar, sent as an ambassador by Pope Innocent IV., to the Tartar, and other nations of the East, in 1245, is the first who mentions this liquor, and speaks of ale also as a common beverage. At the court of the Khan Batou, he met with great hospitality, and he informs us, that a table was permanently placed before the door of the tent of the Khan, on which stood many superb cups of gold and silver, richly set with precious stones, full of cosmos or koumiss, for the accommodation of visiters and strangers; and that neither the Batou, nor any of the Tartar princes, drank in public, without having singers and harpers playing before them.—De Rubruquis, a monk, who went as ambassador from Louis IX. of France, in 1258, into different parts of the East, describes its preparation with tolerable accuracy; and says, it was so plentiful in his time, that he knew one person alone, who was served daily from his farms with a superior kind of it, made from the milk of 100 mares, and that a number of his acquaintance together received the produce of 3000 mares. This is not to be wondered at, when we consider that the riches of a Tartar consists in the multitude of his cattle, and that some individuals, according to Pallas, have been known to possess 10,000 horses, 300 camels, 4000 horned cattle, 20,000 sheep, and upwards of 2000 goats, and, in many instances, have such a quantity of sheep as to be wholly ignorant of their number.

Marco Polo, who passed through a great part of Asia, in the middle of the thirteenth century, speaks of koumiss as a common drink, and tells us that the great Khan of Tartary had, in his time, a herd of white horses and mares, to the amount of 10,000, of the milk of which none but the royal family were permitted to partake; and so artful were some of the attendants at court, that they could draw koumiss from a secret reservoir, without the appearance of any agency. Late writers describe it as a wholesome, nutritious beverage, and allow that it possesses important medicinal qualities.* Koumiss, is said to be so healthful and renovating, that the Bashkir Tartars, who, from the impoverished state of their living during winter, are weak and emaciated, soon after returning to the use of koumiss in summer, become fat and invigorated. Those who use it say that they have little desire for other sustenance, and that it renders their veins replete, infuses animation, prevents langour, without producing

* Edinb. Phil. Trans. vol. i. p. 17, &c. Guthrie's Tour, 4to. pp. 277-8-9. Whittington's Journey, in 1816, through Little Tartary, &c. in Walpole's Travels, pp. 463 and 468.

indigestion, nausea, acidity, or any of those consequences which usually follow excess in other beverages. It renders those who use it extremely active. A Mongul, who was accustomed to subsist upon it, was able, at the advanced age of sixty, to ride 200 wersts in a day, without being fatigued—a proof of its salutary influence. This liquor is prepared in various ways, but all coming to the same issue. The most simple mode appears to be the following:—To any quantity of mares' milk, a sixth part of warm water is added, and as it is usual to make the liquor in skins, the mixture is poured into a bag of this kind, in which had been left as much of the old milk as would render the new sour. In summer, fermentation speedily takes place, the first signs of which are the appearance of a thick scum, or substance, on the surface. After this has gathered, the whole mass is blended together, much in the manner of churning, but which process lasts but a few minutes: it is then allowed to remain quiescent for some hours, and again agitated in a similar manner. Thus treated alternately, it soon assumes that stage of vinous fermentation necessary to effect its completion. In summer, this is accomplished in 24 hours; but, according to Pallas, it can be effected in 12 hours by a forced process. In winter, it requires a longer time, say three or four days, with the assistance of artificial heat and a greater frequency of agitation. Very different from the effect produced by churning milk in this country, this process of agitation affords neither cream nor curds; but yields a beverage of a very agreeable vinous flavour, which inebriates in proportion to the quantity taken. To throw the milk into fermentation, a little sour cow's milk, koumiss, a piece of sour leaven of rye bread, or a small portion of the stomach of a colt, a lamb, or a calf, is indispensable, and indiscriminately used as rennet. In making koumiss, Strahlenberg says, that the Calmucks take off the thick material at the top of the milk, after it has become sour, and use it in their food, leaving the remaining liquid for distillation. This is quite erroneous, as a closer acquaintance with the Tartar practice has proved; for it is well known, that no perfect fermentation, even though the usual ferment be added, can be effected from any one of the component parts of the milk alone, nor will it afford a spirit unless the milk has all its parts in their natural proportion. Doctor Clarke, in the observations which he makes on koumiss, seems to have fallen into a similar error, when he says, that the milk collected over night is churned in the morning into butter and the buttermilk distilled. This it must appear, from the proceeding remarks, cannot be the case, since no butter is obtained from the milk, as koumiss cannot be made at all, should any of the constituents of the milk be

separated, and therefore the Tartars must have been in jest, or he misunderstood them, when they told the Doctor their brandy was distilled merely from buttermilk.* Nieuhoff states, that while in China, he drank Samtchoo as strong as brandy, which had been distilled from new milk; and says, that it was obtained from the Emperor's cellar as a favour; but how this species of liquor was manufactured he has given no account. From experiments made on milk during fermentation, it appears that the closer the vessel is in which it is kept, and the less fixed air allowed to escape during the process, the greater the quantity of spirit obtained, so that the proportion of the brandy produced from the material in the close vessel, to that fermented in an open one, is as one gallon to three. This experiment shews the policy of conducting the process of fermentation in close vessels in our distilleries, in preference to that of open ones, since it evidently prevents the escape of a considerable portion of alcoholic material. The milk collected for koumiss is fermented mostly in leathern bags formed like a stone jar, wide at bottom and narrow at top, and containing about an anker each. These are usually made of the hides of cows, goats or horses, fresh skinned; they are steeped in water till the hair rubs off, and where no astringent herbage is to be found, are soaked thoroughly in blood and dried in the most warm and smoky parts of the huts. By this means, the bags are rendered waterproof, and even made to retain oil.—The practice of keeping milk in skins is of great antiquity, as we read in Judges iv. 19, of Jael, wife of Heber, when Sisera, the Canaanitish general, visited her tent, opening a bottle of milk and giving him to drink because he was thirsty. The Tartars display much ingenuity in the construction of these bottles: from the skins of kids they prepare small ones, which answer as well as flasks, and among the Calmucks these are rendered transparent and durable by means of smoke. This preparation is perhaps similar to that alluded to in the 119th Psalm, 83rd verse.

The largest bags of which we have any account, were those employed by Kutuki, the widow of Mergus, one of the Mongul Khans, in order to have revenge of Nawr, a neighbouring Khan, for betraying him into the hands of a prince of China, by whom he was sewed up in a sack, and left to expire on a wooden ass. Affecting a passion for Nawr, formerly one of her admirers, Kutuki invited him to an interview, which being accepted, she set out to meet him carrying with her, on waggons prepared for the purpose, immense vessels made of

* Clarke's Travels, 4to. vol. i. p. 239.

ox hides filled with koumiss, together with one hundred sheep and ten mares, already prepared for a feast. The meeting was apparently joyful, while the prince and his attendants were closely plied with liquor until they became intoxicated, when, by a signal from the princess, the vessels were opened, out of which a number of armed men issued and cut Nawr, whom she had already stabbed, and his followers into pieces. The ancient Romans, it appears, used skin bags of a large size for holding wine; for in a picture found in the ruins of a wine-shop in Pompeii, there is the representation of an enormous bag placed on a wine cart, and occupying the whole of the machine, which is in the shape of a boat. Two men are seen as in the act of drawing off the wine into amphoræ, or vessels employed for that purpose.

The well known hospitality of the Tartars renders the accumulation of these bags, particularly among the chiefs, sometimes incredible, since 500 ankers of koumiss is considered no uncommon stock. At marriage ceremonies, (a time of peculiar rejoicing,) it is not unusual to see from two to four gallons of that liquor swallowed at three draughts.*

The Usbecks, Mandshurs, Monguls, Calmucks, &c., are very expert in making koumiss: that properly so called is from the milk of mares. When a sufficient supply of this milk cannot be obtained, recourse is had to that of the cow, and, amongst the Monguls, to that of the sheep and camel, from which a wine is produced, usually called koumiss, but by the Tartars termed *airen* or *airik*. The milk of the mare is preferred, being more fluid, though imbued with a slight alkaline taste much esteemed by all the nomade tribes.

In distillation, mare's milk yields nearly one-tenth of alcohol, more than that of the cow. The spirit from both is indifferently called *arrack*,† *araka*, or *arika*, and sometimes koumiss; it is often presented under the title of *vina*. The common people are generally content with the spirit obtained from the first distillation; but the wealthy, to encrease its strength, have it distilled a second time, when it becomes highly intoxicating. The word arrack is decided by philologers to be of Indian origin; and should the conjecture be correct, that it is derived from the *areca-nut*, or the *arrack-tree*, as Kœmpfer calls it,‡ it is clear, that as a spirit was extracted from that fruit, the name was given to all liquors having similar intoxicating

* Sauer's Account of Billing's Expedition, 4to. p. 128.

† Timkowski's Travels, vol. i. p. 53.

‡ Vide Amenitatum Exoticarum Fasciculi, 4to.

effects. The term arrack being common in eastern countries where the arts of civilized life have been so early cultivated, it is more reasonable to suppose that the Tartars received this word through their eastern connexions with the Chinese, or other oriental nations, than to attribute it to a derivation foreign to their language, or as a generic term of their own. The great source of all Indian literature, and the parent of almost every oriental dialect, is the Sanscrit, a language of the most venerable and unfathomable antiquity, though now confined to the libraries of the Brahmins, and solely appropriated to religious laws and records. Mr. Halhed, in the preface to his Grammar of the Bengal language, says, that he was astonished to find a strong similitude between the Persian, Arabian, and even the Latin and Greek languages, not merely in technical and metaphorical terms, which the mutation of refined arts or improved manners might have incidentally introduced, but in the very groundwork of language—in monosyllables—in the names of numbers, and the appellations which would be first employed on the immediate dawn of civilisation. Telinga is a dialect of the Sanscrit, in which the word *areca* is found, it is used by the Brahmins in writing Sancrit, and since to the latter all the other tongues of India are more or less indebted, the term *areca*, or *arrack*, may be fairly traced through the different languages of the East, so that the general use and application of this word in Asiatic countries cannot appear strange.*—To these considerations may be added, that in Malabar the tree which yields the material from which this oriental beverage is produced is termed *areca*, and, among the Tongusians, Calmucks, Kirghises, and other hordes, koumiss, in its ardent state, is known by the general term, "Arrack or Rak." Klaproth says, that the Ossetians, (anciently Alans,) a Caucasian people, applied the word "Arak" to denote all distilled liquors†—a decided confirmation of the foregoing observations and opinions.

The distillation of koumiss is generally effected by means of two earthen pots closely stopped, the upper one of which is usually covered with wet clay, the condensed vapour running slowly through a small wooden pipe into a receiver. Some distil it in copper vessels after the manner of the Chinese. The spirit is at first very weak, but generally brought up by a second operation, when greater

* Vide the Grammar and Dictionary of the Mahratta Language by Dr. Carey; also the translation of the Laws of Menu, by Sir William Jones.

† Asia Polyglotta, p. 89. Hist. Tatars, 8vo. vol. ii. p. 517.

strength is required.—Doctor Clarke,* saw this process performed by a still constructed of mud, or very coarse clay, having for the neck of the retort a piece of cane. The simplicity of the operation, the rudeness of the machinery, and the material from which the spirit is drawn, are highly characteristic of its great antiquity. The annexed is a view of a Calmuck still at work, as above described, with a female carrying water to wet the mud on the head of the still and receiver.

In Iceland, several preparations of milk have been long in common use, such as *struig* or whey boiled to the consistence of sour milk, and *syra*, or sour whey fermented in casks, kept and only deemed fit for drinking at the end of a year.† But the Icelanders were unacquainted with the distillation of fermented milk, so that the Tartars appear to be the sole inventers of this art. Indeed from their pastoral habits and from subsisting chiefly on milk, its intoxicating qualities would soon be developed; for, as want and privation lead to many discoveries, and as rural life seeks with avidity whatever enlivens a solitary hour or exhilarates the spirits, the Tartars would naturally seize on those properties afforded by the milk of their flocks and herds to turn them to that account, which would best afford pleasure or banish care. That the method of extracting an intoxicating drink from milk was long practised by these people, before the

* Travels in Russia, Turkey, and Asia.

† Mackenzie's Iceland, 4to. p. 156 and 277.

art of distillation was known either to the Saracens or Genoese, there cannot be a shadow of doubt. Caprini, De Rubruquis, and Marco Polo everywhere found koumiss and other liquors in abundance, at a time when the knowledge of distillation in Europe was known only to the learned, and practised as an extraordinary discovery, while the sale of the spirit was confined to the apothecaries; it being considered rather as a medicine than a luxury.—In their social intercourse, the Tartars have occasional meetings for the purpose of enjoying the produce of their distillations. Clarke, speaking of the Calmucks, says, that at such times, every one brings his share of brandy and koumiss; and the whole is placed on the ground in the open air, round which the guests, male and female, seated on the ground, form a circle. One of the party performs the office of cup-bearer. The young women all the time chaunt songs of love, or war, fabulous adventures, or heroic achievements; no one rises, the cup being passed from hand to hand till the whole is consumed, without the least interruption of the harmony, either from inebriety or otherwise—a fine example of propriety to more civilized nations. Like the Indians of Paraguay, not only the domestic affairs are committed to the women, but like them also, the distilling or manufacturing of intoxicating drink is always under their immediate management, though they indulge not in its abuses. It is customary, both in tapping the produce of the still and bags of koumiss, to thrust in a tuft of camel's hair tied to the end of a stick, and when saturated with the liquor, to squeeze some of it into the palm of their hands, take a little, and then scatter it around as an offering to their god:—a practice common amongst many heathen nations in giving the first fruits to the deity. De Rubruquis observed amongst the Tartars a practice in which koumiss was alike rendered sacred, by placing the image of a deceased friend over his tomb with the face towards the East, holding a consecrated drinking-cup before his stomach. At one of these monuments, he saw sixteen horse hides hung on high posts, four towards each cardinal point, with koumiss, or cosmos for the deceased to drink in order to refresh him in his passage to the other world. It is usual amongst the Monguls, as a token of respect to a deceased friend, to pour on the ground a libation of koumiss as a peace-offering to the deity.

In order to obtain milk from the mare, which is usually done three or four times a-day, the foal is generally allowed to be present, from the idea that the dam yields a greater quantity in conseqence, and more readily than if it were absent. For this purpose, the foal is even allowed to suck a little from the dam, particularly in cases

where she is refractory. The animal is all the time fastened to a long line between two poles, and to which the foal is likewise secured. This singularity of the mare, yielding her milk freely when the foal is present, is not to be wondered at when it is asserted that the ass gives her milk no longer than the impression of the foal is on her mind: Doctor Hunter proved this by an experiment which shewed that even the skin of the foal thrown over the back of another was sufficient to induce the animal to give her milk without reluctance.* In Scotland, it was formerly a practice to place a *Tulchan*, or calf's skin stuffed, before a cow that had lost her calf, in order to induce her to part with her milk without opposition.† A reason assigned by the Eluths for preferring mare's milk to that of cow's, is not on account, in their estimation of its being better and richer, but that the latter cannot be so easily procured, because, after the calf is taken away, the cow will not suffer herself to be milked with the same ease and familiarity: hence necessity induced them to employ mare's milk.

The horse, which is always entire, is allowed to rove in common with the herd, so that a constant succession of breed is kept up and milk is in greater abundance.—The faculty in this country recommend the milk of the ass as beneficial in pulmonary affections, yet it is extraordinary that this milk has never been subjected to the same process as that of the mare amongst the Tartars, and why the milk of the mare has not been tried with us as a specific remedy, in the same manner as that of the ass, has not been explained. The scarcity of brood mares need not be urged as an objection, since the experiment might be made from a singe animal. It is worthy of remark, that Scheele, a Swedish chemist, although he made himself early acquainted with the fermenting powers of this liquid, never seemed to suspect the possibility of extracting a spirit from it. Newman, a German, Voltolin, a Hollander, and Macquer, a Frenchman, laboured under nearly similar mistaken notions, conceiving that no spirit could be obtained from milk without the addition of some vegetable matter. Doctor Grieve was among the first who determined, by experiment, that milk alone was capable of affording spirits without the admixture of any extraneous or adventitious substance:—a secret which, although unknown to us, was familiar for ages to the uncultivated wanderers in the Scythian deserts.

In almost every country, though milk is resorted to as a nutritious and agreeable beverage, yet some portions of mankind have been found to dislike it. The Cochin-Chinese have an antipathy against

* Vide Journal of the Royal Institution, No. 2.

† Ivanhoe, chap. xxiii. p. 321.

it, amounting to loathing: they insist that the practice of using it is little better than that of using the blood of the animal. Among some of the tribes on the Zaire, Captain Tuckey observed,* that, although cows were numerous, no use was made of their milk, from some superstitious aversion, arising, perhaps, from notions similar to those of the Cochin Chinese, or some other unaccountable prejudices. Not so in Abyssinia, where the wealth of an individual is estimated by the number of his cattle; for he is accounted rich who bathes several times a-year in milk, as every man possessing a thousand cows appropriates one day's milk annually to form a bath for his friends. In South America, where cattle are numerous, we do not find that they are domesticated for the same purposes as those to which they are applied by Tartars and Europeans. Nature, however, has been bountiful in giving to man in every part of the world, necessaries to support his wants and gratify his appetites.—"We have seen," says Blumenbach, in his Elements of Physiology, "the analogy between vegetables and animals in structure and functions, as well as in elementary and proximate principles. The secretions of both may be innocuous or deleterious. The most remarkable analogy in secretion respects milk."† In South America, Humboldt saw a tree that, when wounded, yields abundance of rich milk, which the negroes drink and grow fat upon, and which affords a caseous coagulum. The tree grows on the barren rock, has coriaceous dry leaves; for several months is not moistened by a shower, yet if an incision be made in its trunk, the milk pours forth. This sweet vegetable fountain is most copious at sun-rise, and the natives are then seen hastening from all quarters with bowls to the cow-tree, or *palo de vaca*, to collect this nourishing fluid.

The art of preparing koumiss seems to be familiar or common to all the tribes inhabiting the extensive regions of central Asia. The *yowrt* of the Turks and the *pima* of the Laplanders are but modifications of this liquor. That acidulated material in India, called *dhy*, is found among all the Tartars. In the provinces bordering on Bootan, it is dried in masses till it resembles chalk, and is used mixed in water as a pleasant beverage. The operation of drying the *dhy* is sometimes performed by tieing it tight in cloth bags and suspending it under the bellies of horses. Amongst the Calmucks, Khirghises, and other Tartar tribes, the process of distillation is carried on by means of fuel collected from the dry dung of their camels, horses, and other

* Tuckey's Narrative of a Voyage to Explore the River Zaire, 4to p. 111.

† Elliotson's Edit. 8vo., p. 508.

animals, by slaves, whose province it is to gather it, and carry it home to their tents where it is baked into cakes resembling peat or turf: it makes a clear and excellent fire, yielding great heat. A similar mode of obtaining fuel is practised in India. The women follow the herds of horses, sheep and black cattle, and gather the dung, which they carry home in baskets. The dung is formed into cakes of about half an inch thick and nine inches in diameter. The walls of their best houses are frequently stuck round with these cakes. At Seringapatam, numerous females are to be found carrying baskets of this dung for sale. The horses are so numerous in many parts of Tartary, that they are found in herds in a wild state, and some of the tribes procure supplies by means of hawks. These birds are taught to seize upon the head or neck of the animal, and so tease and weary him, that while endeavouring to get rid of his enemy, the hunter approaches and captures him. In the same manner wild sheep are taken, many of whose tails are said to weigh from 20 to 30 pounds.—The expertness of the Tartars in training falcons or hawks for the chase is such, that it is a standing law among the Mongols subject to China, to furnish the emperor with a number of these birds every year.

The milk of the sheep affords a beverage to the Calmucks, Kerghis, and other hordes, to which is given the name of *arjan;* it is more a preparation of sour milk than of real koumiss. Besides the drinks already noticed amongst the Tartars, De Rubruquis met with a variety of others, such as wine; *caracina* or *teracina*, a very intoxicating drink made from rice, very like white wine; *caracosmus*, clear cows' milk or clarified whey; and *ball* or mead drawn from honey. In the palace of Mangu Khan, he observed a curious artificial tree with various devices, intermingled with branches and leaves, intertwined with golden serpents. This tree contained concealed pipes through which the four kinds of liquor just mentioned flowed in abundance, and at the root or base were four silver lions holding the different liquors, which were supplied from reservoirs outside the palace. On the top of this tree was a figure of an angel with a trumpet sounded by artificial bellows whenever a supply of drink was wanted. As soon as the sound of this trumpet was heard, a man appointed for the purpose poured liquor into the respective pipes, from which it was handed to the guests in waiting.—This elegant piece of mechanism shews to what degree of taste and politeness the Tartar princes had arrived and the luxury which surrounded their tables: they still keep up considerable state, and by those tribes subject to China, the refinements and customs of that country are undeviatingly maintained. Their hospitality, however, is more

extended, for in every Tartar tent there is always a kettle on the fire full of tea, mixed with milk, butter, and salt. Here the weary traveller may at all times freely enter and quench his thirst; but he must have his own wooden cup, which every Mongol carries about him, as an article indispensably necessary. The most esteemed of these cups are brought from Thibet; the rich generally have them lined with silver. Two kinds of bowls, of a very costly description, are used at their drinking parties. They are richly varnished, and adorned with clouded streaks which give them an elegant appearance. One of them is composed of yellow wood, and called *djamdjaya;* the other is also of a yellow tinge, and named *Kounlar;* both are considered to possess the properties of counteracting the effects of poison.

Besides the public meetings held at certain periods, all the Tartar tribes have their private and domestic associations, during which they indulge in smoking, drinking, sallies of wit, anecdote, and poetry, descriptive of their exploits in hunting, the swiftness of their steeds, boldness of adventure, commemorating the deeds of their ancestors, or their happy meeting with friends.

The following Mongol effusion on an occasion of this description, which I have versified, may prove acceptable as a specimen of their ability and genius for poetry:—

How sweet the draught our generous prince bestows,
Arrack, than honey sweeter to the taste;
Come, let us drink, the sparkling liquor flows!
To cheer the silence of the boundless waste.

Firm on the plain, our tents in order stand,
The flocks or feed, or indolently rove;
Our wives, our children, and our friends demand
To share the banquet and the smile of love.

In social converse, let our hours be pass'd;
But no excess be-cloud the cheerful day—
Like shrubs that bend beneath the sweeping blast
Are those who drink the strength of life away.

Past are the steppes,* the arid hills retire
Far in the distance, clothed in misty hue;
Here pastures green our fondest hopes inspire,
And murky scenes no longer cloud the view.

Since chance has brought us face to face once more,
Let us unite to quaff the flowing bowl;
What greater joy has life itself in store
Than brethren met to mingle soul with soul?

* Steppes are, for the most part, extensive elevated regions, found in many of the northern Asiatic districts—in sterility, some of them resemble the Desert of Sahara, in Africa, affording scarcely any thing for the subsistence of either man or beast.

In summer, the men and women of Turkestan assemble under trees to drink, dance, ride on horseback, and play on various musical instruments: at these, and their other festive meetings, wine, arrack, and koumiss, are consumed in abundance. These meetings generally take place after their lent, and when the sacrifices, called *oshour*, have been offered for the souls of their relations: the fetes, on these occasions, are termed *Nourouz*, and are times of great rejoicing. The Jakuti Tartars have many ceremonies and festivals, at which they use a great deal of liquor. At one of these, where animals are sacrificed to idols, they sit in a circle and consume immense quantities of koumiss, and become so intoxicated that they are unable to stir from their positions for a length of time. Quantities of drink are thrown into the air with an unsparing hand, which, they conceive, allay the angry feeling of the offended deity and those spirits which govern the elements.

Such of the tribes as profess the Mahometan faith, particularly those of Great and Little Bucharia, are forbidden the use of inebriating drinks; but with them, as with their more enlightened neighbours, a want of attachment to the Prophet's precept occasions excesses, rendered contemptible by the hypocritical arts employed to conceal them. When Eversmann and Jakovlew visited Bucharia in the train of the Russian Embassy in 1821, wine and brandy were consumed in great quantities, chiefly manufactured by the Jews. These people, as well as the Armenians, are permitted to make as much as they please, and to use it in their houses where they may get intoxicated, but they dare not go abroad in that state, lest the Khan would punish them, which he sometimes does with great severity. An instance of his cruelty in this respect occurred some years ago, in the treatment of a Jewish physician who had got drunk on the occasion of his son's marriage. This gave the Khan such offence that he ordered him to be immediately executed. The Khan is very capricious in his observance of this law: sometimes he orders the houses to be searched, and where any liquor is found he causes the owners to be beaten, yet he himself often drinks to excess. The police never venture to examine the houses of the Usbeck officers, though many of them are drunkards, but the poorer sort are strictly watched, and if any of them are detected in the streets of the capital with a bottle, or intoxicated, they are severely punished, and even sometimes put to death if they had ever before been guilty of a similar offence. The wine of Bucharia is of strong quality, and of greater body than most European wines, being the produce of the richest grapes. Their brandy is made of the lees of the wine or from raisins, is always

rectified, and of a strength equal to West India rum; it is colourless, and has an empyreumatic taste and flavour. The stills employed are much the same as those used by the Jews in Turkey.

It was in this part of Asia, that Tamerlane, or Timour the Tartar, gave, on the marriage of his six grandsons, the celebrated feast of which so many thousands were partakers, and which conveys to us a knowledge of the liquors then in use. The scene was truly magnificent: a plain, studded with tents and pavilions, displayed all the grandeur of oriental pomp and magnificence; forests were cut down for the supply of fuel, pyramids of meat and vases filled with every description of liquor, such as koumiss, oxymel, hippocras, brandy, sirma, sherbet, and wines of various countries, attracted the attention of the voluptuary, and were presented to the guests, on salvers of gold and silver, in cups of agate, crystal and gold, adorned with pearls and jewels. At this banquet, all the subordinate rulers and chiefs of Tartary, together with ambassadors from European courts and envoys from the conquered countries, were assembled; and the public joy was testified by illuminations and masquerades, a general indulgence was proclaimed, every law was relaxed, every pleasure was allowed, the people were free, and the sovereign presided, a delighted spectator. Pearls and rubies were showered on the heads of the brides and bridegrooms, and left to be collected by their attendants.* At another feast given by a Khan of Tartary, which lasted for seven days, there were consumed daily eight waggon loads of wine, two of brandy, and twenty of koumis, while, during each day, there was a slaughter of three hundred horses, as many cows, and a thousand sheep. But, how are the mighty fallen! those states which were once governed by the gigantic powers of a Tamerlane, are now dwindled into insignificance, and the intellect of their rulers, narrowed by the barbarism which surrounds them, is unable or unwilling to encourage the growth of science, or the progress of arts.

Wherever rice or any other kind of grain is cultivated in Tartary, the fermenting process is not unknown: in the same manner, the virtues of the grape are not allowed to remain unnoticed by the most ignorant of the hordes, since wine is familiar throughout a large portion of this extensive region. The beer to be met with is, for the most part, of indifferent quality; that brewed from barley and millet by the Turkestans, termed *baksoum*, more resembles water boiled with rice than beer. They admire it, and affirm that it is an invaluable remedy for dysentery: it is of an acid taste without smell, has little of an

* Vide Gibbon's Decline and Fall of the Roman Empire.

intoxicating quality, and keeps but a short time.—Such of the grain as they distil, is put into a vessel carefully covered, and, after being allowed to run into a slight state of acetous fermentation, it is put into the still and drawn off at a good strength, under the usual name of arrack.

The Turkestans have various beverages, among which is an excellent cooling drink obtained from melons. This fruit is of the finest description, and so large as to be from three to four feet in circumference ; every part of it, except the rind and seed, is equally good for eating and of a most agreeable flavour. The melons are frequently sent to a great distance, even so far as St. Petersburg : those of Khorassan are sent to Ispahan, the capital of Persia, for the use of the monarch, a journey of thirty days ; and melons are conveyed from Agra to Surat, a distance of nearly 700 miles, by pedestrians, in baskets hung at the extremities of a pole carried on the shoulders, at the rate of seven or eight leagues a day. The emperor Babas says, that he shed tears over a melon of Turkestan, which he cut up in India, after his conquest, its flavour having brought his native country and other tender associations to his recollection. The value of this fruit was in such high estimation, that it is related of Aly Sultan, that he caused a soldier, who had taken two melons from the field of a planter, to be hanged on the spot where he committed the theft.

Before quitting the subject of Tartary, it may be proper to observe that the Mantchoos who conquered China, and whose descendants still hold the sovereignty of that empire, prepare a wine of a very peculiar nature from the flesh of lambs, either by fermenting it, reduced to a kind of paste, with the milk of their domestic animals, or bruising it to a pulpy substance with rice. When properly matured, it is put into jars, and then drawn off as occasion requires. It has the character of being strong and nourishing, and it is said that their most voluptuous orgies consist in getting drunk with it. Whatever remains, after the supply of domestic wants, is exported into China or Corea, under the name of *lamb wine*.* Gerbillon says, that the rich Mongols leave mutton to ferment with their sour milk before they distil it. This explains the mystery of the spirit said to be made from the flesh of sheep by the Tartars in China, of which it has been said the emperors have been so fond.

During the sojourn of Michailow among the Kiwenses, he saw them prepare a drink called *bursa* from a description of berries termed *psak*, which much resembled dates. This liquor was made

* The Natural and Civil Hist. of Tonquin, by the Abbe Rickard.

by boiling the berries, pressing out the kernels, and filtering the juice—the fermentation followed, and was so rapid that it became highly intoxicating, and fit for use the morning after it was made. He says that two cups of it inebriated him as much as if he had drunk an equal quantity of brandy; and that its qualities were so fascinating that the more he drank, the more he was inclined to drink. The Khirghises and Karakalpaks are fond of it, and, when a supply of berries can be obtained, they frequently indulge to excess.—From the strong likeness of these berries to *dates*, it is not improbable but that the *bursa* is the ancient date wine mentioned in Scripture and so celebrated along the banks of the Euphrates as well as in other parts of Asia, and is perhaps the same as that which was brought in skins down the Tigris and Euphrates to Babylon. Notwithstanding the prohibition of Mahometanism and the strictness of Budhism, the love for intoxicating liquors is so prevalent in Tartary, that some of the northern tribes not only barter their cattle with foreign merchants, but even part with their children for the trifling consideration of tobacco and spirits.—Such is the degradation to which the absence of true religion and the refinements of education has reduced so many of our fellow creatures!

In extending our views to India, we are led to contemplate an immense portion of our species as existing at a remote period, in a very advanced state of civilisation, successfully cultivating the arts and sciences, and spreading their renown to distant nations. Although some of the wisest philosophers of Greece, viz. Pythagoras, Anaxarchus, Pyrrho, and others, visited that country and returned enriched by the wisdom of its sages,* yet the early arts of these nations still remain unknown. Since, however, we are assured, that they were proficients in metallurgy, the manufacture of sugar, indigo, dyeing, embroidery, working in ivory, engraving on precious gems and stones, in the production of the loom and needle, in mechanics, architecture, astronomy, and mathematics,† it is natural to infer that they must have been early acquainted with the composition of some kind of intoxicating beverage; drink being indispensable in tropical climates.

In the Padma Puran, a sacred book of India, there is sufficient evidence that fermented liquors were invented in the days of Noah; and the story of *Satyavarman* having become intoxicated with mead, and in that state discovered by his three sons, *Shema, Charma, and*

* Hist Phil, vol i. p. 51.

† Asiatic Researches, vol. iv. p. 33, 34.

Iya'peti, is but another version of the relation contained in the 9th chap. of Genesis respecting Noah and his three sons.*

According to the mythology of the Hindoos, their deities are said to have drunk at their feasts a liquor termed *amruti*, in the same manner as the Grecian deities drank their ambrosia; so that by attributing to their gods a passion for exhilarating drink, they alluded to an origin anterior to any human record.

What the early drinks of the people of India were, there is no correct account, but, as sugar was in extensive use, it is likely that it formed a principal ingredient of their liquors. The raw juice of the cane from its palatable nature, was first made use of; afterwards it was boiled, and, in process of time, its inebriating properties were developed by fermentation.

Sugar is supposed to have been one of the articles forming the presents made by the queen of Sheba to king Solomon; as fine sugar is to this day sent as a present to the Grand Seignior by the Egyptians, in the same manner as Jacob sent honey to a viceroy of Pharaoh. Nearchus, the admiral of Alexander, is said to have been the first who brought any information respecting sugar into Europe; and although the Arabians cultivated the sugar-cane and supplied the city of Rome with its produce, yet it is well known that they were indebted to the orientals for it, as well as for the knowledge of its manufacture. *Soukar*, or, *Sukhir*, the Arabic term for sugar, etymologists say, comes from the Hebrew word *siker*, which signifies an intoxicating liquor; and it is remarkable that this Hebrew term is translated in nineteen instances in our Scriptures as implying strong drink. Some philologists say, that *gur*, both in the ancient and modern languages of India, signifies *raw sugar*, and that *Sarcara* is the term applied to it in its manufactured state.

From the middle syllable of the Sanscrit word *ich-sucasa*, it is alleged that the Arabic name for sugar is derived, and there seems to be good grounds for this inference, as the Sanscrit *suca*, the Hebrew *siker*, the Greek *sikera*, the Persian *shukker*, the Indian *sukur*, the German *sucker*, the Dutch *suiker*, the Danish *sukker*, the Swedish *socker*, the French *sucre*, and the English *sugar*, appear to have one common origin, if we judge from orthography, pronounciation, and acceptation.

But although the Arabians were the first who wrote of sugar extracted from the sugar-cane, which they called *honey* of *cane;* yet it is not to be inferred, that to them other nations were indebted for a

* Vide Sir William Jones's Works.

knowledge of its uses, or the conversion of it into an intoxicating liquor. Lucan mentions an Eastern nation, in alliance with Pompey, that used this liquor as a common drink. Quintus Curtius, in his life of Alexander the Great, states, that at the time of the invasion of India by that monarch, the natives made use of a sort of wine which is supposed to have been no other than toddy, or the unfermented juice of cocoa-nut. Nearchus in his Periplus* mentions an island called *Oigana* or *Wroct*, now *Kismis*, which was abundant in vines and palm-trees. The latter name it obtained from a grape, called *kismis*, peculiar to it to this day. Doctor Vincent, the translator of the Periplus, says, that at that time, a great trade was carried on in Arabian and Syrian wines; but the former, he thinks, was palm or toddy wine: of this there can be little doubt, from the great abundance of that wine in use amongst the Arabians, it being an article of commerce with them from a remote period, previous to the era of the Hegira. The people of Hindostan dealt largely in the importations, and their acquaintance with a variety of native drinks shews the extent to which they had arrived in their manufacture.—From the Institutes of Menu,† we learn that the inebriating liquors of the Hindoos may be considered as of three principal sorts; one extracted from dregs of sugar, another from bruised rice, and a third from the flowers of the Madhuca tree. The latter, which is better known by the name of *Mahwah*, has afforded materials for distillation from time immemorial; and in India, when first visited by Europeans, the inhabitants were found in possession of the art of extracting a spirit from its flowers. Now, it may be asked, how could they have acquired this art from the Arabians, a people prohibited, even before the name of the Saracens became so eminent, from using the mildest intoxicating liquors? Some, however, think that distillation was not known to the inhabitants of India before their intercourse with the Saracens, and that their drinks were mere extracts procured by compression and fermentation; but why the era of the introduction of distillation into India should be settled at the commencement of the Saracen ascendancy, is not only unaccountable, but at variance with the historic records respecting the knowledge and acquirements of the Eastern nations; and is purely attributable to that prejudice which gives the invention to the Saracens. The trade of the East, which had continued long in the hands of the Egyptians, was, in 640, transferred to the Saracens by the Caliph Omar. It is therefore more natural to infer that the Saracens had received, through the Egyptians,

* Periplus, part i. p. 58. † Chap xi. Inst. 95.

a knowledge of the use of the still from the inhabitants of India, than that they, themselves, had been in possession of the art to which the genius of their religion was so directly opposed, because it is certain from the researches of Sir William Jones, that the Hindoos were acquainted with all the chemical arts which were said to have been invented by the Egyptians, apparently before the latter had even acquired the rank or title of a civilized people. The expedition of Osiris to India, where it is said he reigned 52 years, and established many Egyptian colonies, joined to the conquests of Sesostris, furnishes proofs that the Egyptians had an early intercourse with India. When Cambyses invaded Egypt, it is well known that many of the inhabitants fled to India, as a country with which they were familiar. It is also asserted, that in the time of Solomon and during the Trojan war, the Egyptian and Phœnician fleets, as well as those of the Hebrews, visited India and traded thither; so that there must have been a reciprocal interchange of such arts, sciences, and manufactures as were at that time known to the world. To use the expressive language of Doctor Robertson, "what now is in India always was there and is likely still to continue—neither the ferocious violence and illiberal fanatacism of its Mahometan conquerors, nor the power of its European masters, have effected any considerable alteration. The same distinctions of condition take place; the same arrangements in civil and domestic society remain; the same maxims of religion are held in veneration, and the same sciences and arts are cultivated.*"

Wine being, among the Mussulmans, a prohibited article, no commerce could be carried on by them in that commodity. The Indians, however, continued to manufacture wines from various substances and under different names. The chief of these was the *Tàri*, or the fermented juice of the palmyra tree, procured from the *Borassus flabelliformis* of Linnæus, the *Tal* or *Tar* of Bengal, and the *Pannamaram* of the Tamuls. In some parts of India, this tree grows spontaneously; in others, it is cultivated with great care. When planted in a fertile soil, and of thirty years growth, it yields, according to Buchannan, *callu* or palm wine, from the 11th of January to the 11th of June. One active man is considered competent to manage forty trees. Previous to the bursting of the membrane which covers the flowering branch, called by botanists the spatha or spadix, the workman mounts the tree by means of a strap passed round his back, and a rope round his feet, and bruises the part between two flat

* Robertson's Ancient India, Appendix, p. 152.

pieces of stick; this is done for three successive mornings, and on each of the four following ones he cuts a thin slice from the top to prevent the spatha from bursting. On the eighth morning, a clear sweet liquor begins to flow from the wound, which is collected in a pot suspended for that purpose. A good tree will discharge daily about three quarts of juice, which, if intended for drinking, will keep three days; in the fourth, it becomes sour, and what is not sold or drunk is distilled into arrack. This exudation, if continued for three years, will kill the tree; which, however, is generally considered as yielding more profit in this way, than if preserved for the sake of its nuts or for any other purpose. As there are different species of palm trees, there is a diversity of quality in their respective produce, which have accordingly distinct appellations among the natives; but to all of which the English apply the general name of Toddy, a corruption of the Mussulman common term *Tàri*. The wild date *(Elate Sylvestris)* the Mahometans call *Sinday;* in the Carnatic language, *Hinda;* and in the Telinga and Tamul dialects, *callu*. This latter term signifies *thief,* on account of its stealing away the senses. The Sinday is never drunk till after fermentation, which is soon effected by the influence of the sun, and then the liquor is exceedingly intoxicating. When distilled and rectified, it affords a good spirit. Toddy is considered as a cooling and extremely wholesome beverage, operating on some constitutions as a gentle cathartic. European soldiers use it in large quantities when they cannot get arrack, and render it more potent, according to Captain Mundy, by the addition of chillies.* In some parts of India, whole woods of the cocoa-tree are set apart for the purpose of procuring toddy, and the saccharine quality of the fluid is so great as to produce a yeast or barm, similar to that obtained from our malt worts. In the pots intended to receive juice to be boiled into *jaggory,* (a kind of sugar to which it is occasionally converted,) a little quick lime is put to prevent fermentation, or absorb any acidity which might arise, and the juice must be boiled the same day on which it is taken from the tree.—Twelve trees, on an average, daily fill a pot, which, when boiled down, gives six gallons of jaggory. In some places, the *tàri* is used only for drinking; but where it is very plentiful, it is made into *jaggory;* and the poor people use it as a substitute for that extracted from the sugar-cane. Forbes says, that three quarts of the tàri produce a pound of sugar.†

It is stated, that the wild date tree, from which toddy is extracted,

* Pen and Pencil Sketches of India. † Oriental Memoirs, vol. ii. p. 452.

was formerly very abundant in the dominions of the late Tippoo Sultan, who, observing that his subjects frequently debased themselves with tari, commanded all the trees to be cut down, and in places near the capital the order was strictly executed.* He even attempted the absolute prohibition of spirituous liquors.

The order of Tippoo to destroy the palm tree is very extraordinary, as this tree has been held in great estimation, from the most remote period, both in Asia and Africa; while the followers of Mahomet believe it to be peculiar to those favoured countries in which his religion is professed, notwithstanding the prohibition in the Alcoran of the use of intoxicatiug drinks. "Honour the *palm tree*," says a Mahometan writer, "for she is your father's aunt," because, says he, "this tree was formed from the remainder of the clay from which Adam was created."—Thus it would seem to have been considered a distinguished inhabitant of paradise, and a rival of the vine in its use and excellence.

Heber tells us that the vine seemed to thrive well in some of those parts of India which he visited, and that the plants looked beautiful, but were not sufficiently trimmed, at least so close as to render them productive.†

When Fitch, a London merchant, was in India, in 1583, he found the people well versed in the making of palm wine and its distillation. In 1644, Bennin met with arrack as a drink very familiar; and mentions a liquor called *bouleponge*, made of arrack, black sugar, juice of lemon, water, and a little muscadine. Sir Thomas Roe, who visited the Great Mogul, from the court of James the I., found *palmiso wine* and cocoa milk in current use; and at that time, the people appeared to be well acquainted with wine and various other sorts of drink. The cups, then in use, were of massive gold set with the most brilliant gems. These were usually handed to the visiter on a plate of the same metal: the one presented to Sir Thomas was adorned with about 2000 precious stones, and the gold of it weighed about twenty ounces. It was customary in those times to mix pearls and precious gems with wine and other strong drink. A present of this kind was offered to Mr. Burnes, during his late tour through India, by Runjeet Sing, a native prince.

In India, the sugar-cane is cultivated to a great extent. In the whole range from Decca to Delhi, says Heber, and thence through

* Buchanan's Journey through the Mysore, vol. i. p. 56.

† Heber's Narrative of a Journey thro' the Upper Provinces of India, 2 vols. 4to.

the greater part of Rajpootana and Malwah, the raising of sugar is as usual a part of husbandry as that of turnips or potatoes in England; and sugar is prepared in every form except the loaf.

It was a practice among the Mogul monarchs, when in the splendour of power, to have their elephants, usually amounting to 5000, fed on sugar and arrack. The Punjabee chiefs still feed their horses on sugar, and these animals are very spirited, and do not agree with any other food.*

The jaggory, which is extracted from the sugar-cane, and from which the greater part of the native rum is manufactured, is thus procured. The canes are cut into pieces six inches long, and bruised in a mill; the juice which flows from them is strained through a cotton cloth into a boiler, to which is added a certain quantity of lime water. When the evaporation has reduced it to a proper consistence, it is put into a large pot to cool, then poured into a mould having a hundred holes, each in shape of a quadrilateral inverted pyramid. The frame being turned over, the balls fall out, and after being placed on leaves for a day, are exposed for sale, at a price varying from six to twelve shillings the hundred weight. Thus jaggory appears to contain both sugar and molasses, and resembles the product, which in Jamaica comes out of the cooler before it is taken to the curing house, being a little more inspissated, and requiring about 37 gallons to the hundred weight. Heber, during his perigrination through the upper provinces, observed a very simple description of a machine for extracting sugar from the cane. It consisted of a large vat under ground, covered with a stout platform, in the centre of which was a wooden cylinder, apparently the hollowed stump of a tree. In this was a strong piece of timber fixed as in a socket, turned round by a beam, to which two oxen were fastened. Behind the oxen, a man sat thrusting in pieces of cane, about a foot long, between the upright timber and its socket. These being crushed by the action of the timbers, the juice ran down into a vat below.† Stones would be preferable to this mode of grinding, on the principle of a common mill; but they cannot be procured thereof a durable and proper quality: hence the article produced in the remote provinces is of a coarse description. The profit of jaggory either from the cane or the palm is equally divided between the farmer and the goverment. From palms alone, a considerable revenue is raised, the regulations for which differ in different districts. In one

* Jacquemont's Letters from India, vol. ii. p. 215.

† Heber's Narrative vol. ii. p 252.

place, when a person plants a garden, the trees are considered as his property, he paying one half of the produce to the state ; in another, they are let in lots at the rate of £40 per annum. Those are again farmed to some of the inferior villagers, who extract and distil the juices. Could the jaggory from the sugar cane, observes Buchanan, be generally converted either into a palatable spirituous liquor or into sugar, the barren plains of the Carnatic might be rendered productive. The former suggestion appears to be not impracticable, and deserves attention in the way of experiment. If it should answer, the whole of the grain distilled in Europe might be saved for food.* On the same principle, Heber is of opinion that almost the whole of the Deccan might be cultivated with vines ; and that it would be wise in the British government to encourage a speculation of that kind, were it only for the purpose of obtaining a better beverage for the troops than the brandy now in use.† The grapes of Nusseerabad are said to equal those of Shiraz, and the vineyards there are become famous all over India : a sufficient encouragement to make the plantation of the vine more general in that quarter. Such speculations would be well repaid by the employment of so vast a population as occupy those regions.‡

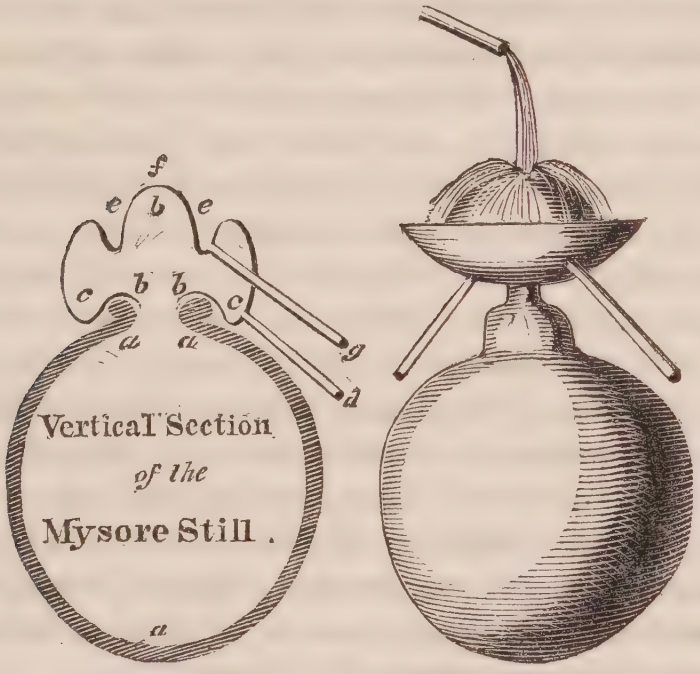
Throughout the Carnatic, the distillation of rum or brandy is carried on by a particular caste ; and the process observed in some of the provinces is described as follows.—From the *Topala*, (*Mimosa leucophlea,*) a tree common in the country, the bark is taken and cut into chips, of which about four pounds are added to the twenty-four pounds and quarter of sugar-cane jaggory, with a quantity of water equal to twice the bulk of this sweet substance. The mixture is made in an earthen jar kept in the shade ; the fermentation, commencing in about twenty-four hours, is completed on the twelfth day, when the liquor is distilled by means of the following apparatus:—The body of the still (*a a a*) is a strong earthen jar, capable of containing three times the bulk of the materials. On this is luted with cow-dung a copper head (*b b b*) having on the inside a gutter (*c c*) for collecting the vapour that has been condensed into spirit by a constant small stream of water, which falls on the head at (*f*). This water is conveyed away by the pipe (*g*), while the spirit is conducted into a jar by the pipe (*d*). The mode of condensing the spirit is very rude ; and the liquor, which is never rectified by a second distillation, is execrable. The natives allege that the bark of the *Topala*, which is very insipid to the taste, is

* Buchanan, vol. i. p. 6. † Heber, vol. iii. p. 123.

‡ Buchanan, vol. i. p. 39.

useful, by diminishing the too great sweetness of the jaggory. "To me, however," observes Buchanan, "it appears to be rather of use, by regulating the fermentation, which in such a warm climate would be apt to run suddenly into the acetous."‡

In the first volume of the Asiatic Researches, there is a description of a method of distillation practised at Chatra, in Ramgur, and other provinces in India, differing but little from that now described. Through the kindness of a gentleman for some years resident in that quarter, I have been favoured with the drawing of a still, which with the section of that used in the Mysore district, as above described, is subjoined.



Vertical Section
of the
Mysore Still.

When the material for distilling, whether rice, molasses, or the simple fermented juice of the cocoa-nut tree, is ready, a hole is dug in the earth suited to the size of the still or jar to be employed; and level with the bottom of this hole there is an underground communication made for the purpose of feeding the fire with atmospheric air; near the edge of the hole a chimney is erected, which serves as well for the supply of fuel, as for the discharge of smoke. A fire of dry wood is first kindled in the pit, and, when the ground is thoroughly heated,* the still is fixed in it, and so bound round with earth, that

* This idea was probably taken from the ancient mode of baking bread in the East. Instead of what we call ovens, they dug a hole in the ground, in which they placed a kind of earthen pot, and to its interior surface, when sufficiently heated, thin cakes were stuck and speedily done.

no heat can escape. When the jar begins to boil, and the steam to ascend, an Indian with a pot or kettle pours a gentle stream of water upon the head of the still already described, or on the broad and thin surface of a plate of tin or copper (with a gutter for the water to run off, represented above), which is fixed on a pan, with a hole in the bottom, luted to the neck of the still, and serving as a condenser. The extreme cold excited by the evaporation of the water on so broad a surface, occasions the vapour from the still to be immediately condensed, and to run in a trickling stream into the receiver.

Maria Graham, in her Journal of a residence in India, thus describes the working of a native still, which she had an opportunity of observing. The still, says she, was simply constructed. Round a hole in the earth, a ledge of clay, four inches high, was raised with an opening about half a foot wide, for the purpose of feeding the fire. Upon the clay a large earthen pot was luted; to its mouth was luted the mouth of a second pot; and where they joined, an earthen spout, a few inches long, was inserted, which served to let off the spirit condensed in the upper jar, which was kept cool by a person pouring water constantly over it. When she went into the cottage, or still-house, she found a woman sitting with a child on one arm, and with the other she was cooling the still, by pouring water on it from a cocoa-nut shell ladle. The woman informed her that she sat at her occupation from sunrise to sunset without scarcely a change of position; and while they were talking, her husband entered the cottage laden with toddy for distilling. He was a *bandari*, or toddy-gatherer. On his head was the common gardener's bonnet, resembling in shape the cap seen on the statues and gems of Paris, and from his girdle were suspended the implements of his trade.*

In 1782, two gentlemen, named Crofts and Lennox, constructed a distillery at Sooksagur, near Calcutta, at which spirituous liquors were distilled in the European manner, and with all the improvements of the day. As these spirits were applied to all the purposes of Batavia arrack, the establishment was found to be of much benefit to the province of Bengal.† If such undertakings were encouraged by the East India Company, they would not only be a means of enriching individuals, but a source of considerable revenue, particularly in a country where there are such abundance of fruits and grain of every description, and where the population, exclusive of Europeans, is estimated at 110,000,000; only ten millions of which

* Foster's Journey from Bengal to England.

† Journal of a Residence in India, 4to p. 25 and 26.

are Mahometans, who are not more strict in the observance of their religious duties than their brethren of the Ottoman empire. The Hindoos, it is well known, although forbidden to use ardent spirits, are not more abstemious in that respect than the natives of other countries. They account brandy an infallible medicine, and, under that impression, frequently rub their joints with this panacea. Even the Brahmins, whose ordinary drink should be water, sometimes run the risk of a loss of caste for an indulgence in the use of intoxicating liquors. Like the Turks, they drink in secret, and like them take every precaution to avoid detection; but their hypocrisy is sometimes discovered, to the no small amusement of their neighbours. From Heber, we learn that, in opposition to their respective religious creeds, both the Hindoos and the Indian Mahometans are great drunkards;* though, according to Hamilton, the civil as well as the ecclesiastical law forbids the use of wine and all distilled liquors. Dubois† relates an anecdote of a Brahmin in the village of Tanjore, whose house took fire, and he being the only person of that caste in the place, the inhabitants flocked from all quarters to assist in the removal of his effects; but what was their astonishment, when, among other things, they discovered a large jar half full of arrack, with which this luxurious disciple of Vishnu had been in the habit of regaling. Tennant says that he, himself heard a Hindoo confess that he was drunk, who did not seem to be deserted by his companions on account of that misdemeanour. Notwithstanding the weakness of some, the Brahmins of high caste are very scrupulous in taking wine. Heber found much difficulty in conquering the doubts of two of them who refused taking physic when dangerously ill, for fear of its being mixed with wine, declaring they would rather die than taste it. Intoxication amongst the natives is not common, but at the time of the *Hoolee*, or Hindoo carnival, the people of central India indulge in all kinds of riot and festivity, and men may be there seen inebriated, as in other parts of the world, on similar occasions.

For what object laws were enacted in the East prohibitory of the use of all kinds of spirituous or intoxicating liquors, has not been explained on any civil or religious principle, whether for the sake of health, temperance, or morality. It is, however, a curious fact, that amidst the numerous class of gods in the Indian mythology, there is none to correspond with Bacchus, except Suradéri, the goddess of wine, who arose, say the Hindoos, from the ocean when it was

* Narrative, vol. iii. p. 267.

† Manners and Customs of the People of India, 4to.

churned with the mountain Mandar; a notion which seems to indicate that the Indians came from a country in which wine was anciently made, and considered as a blessing; though the dangerous effects of intemperance induced their early legislators to prohibit the use of all spirituous liquors.* Picart says, the most probable reason that can be given for the prohibition of wine is the high sense entertained for virtue by some ancient Brahmins, who had the greatest aversion to any thing that might contribute to plunge them into irregularities, or disorder the senses. They considered that drink as highly pernicious which would extinguish a man's reason, and therefore found themselves obliged to inspire the people whom they governed with similar sentiments.†

The manufacture of arrack in India is carried on extensively; a fine description is distilled at Goa, from the Toddy of the cocoa-nut trees which grow abundantly in the neighbourhood. It is sold in casks of 21 gallons each, and the price differs according to its quality; but it is for the most part cheap. An idea of the importance of the arrack trade may be formed from the following account of the imports and exports of this article from part of the territory of Tippoo Sultan and other districts :—

	In 1797.		In 1798.		In 1799.	
	Leagers.	Gallons.	Leagers.	Gallons.	Leagers.	Gallons.
Imported from						
Columbo .	16	75	210	10	75½	
Batavia .	73		32	11		
Cochin .	42		97	12	25	43½
Anjengo .	25		11		23	128
Canara .	2		3			
Exported in 1797, 20			18	25	28	12

Imported by sea, from 1st January to 31st December, 1799, into the Pye Nada District, viz. :—

Arrack,	485 canad.	Cochin arrack,	4 leagers.	Country arrack,	4 leagers.
	96¼ leagers,		4 pipes,		110 pipes.
	31 casks,		2 casks,		392 canad.
	15 kegs,		92 bottles,		
	17½ cases,	Columbo arrack	16½ leagers,	Rum, . . .	2 chests.
	5 jars,		5 casks,		20 cases.
	21 pipes,		4 kegs,	Gin, . .	37 do.
Brandy, .	14 dozen,		7 pipes,		
	2 casks,		15,000 bottles,		
	29 cases,				

Exported in 1799 and 1800, from the above district :—

Arrack,	36¼ leagers,	Rum,	4 pipes,		4 casks Arrack.
	16 kegs,		1 chest,		2 chests brandy.
	150 bottles,	Rum, shrub,	2 boxes,	Col. Arrack,	15 leagers.
Brandy,	7 chests,				30 gallons.
Gin,	53 cases,			Gin,	10 chests.

* Vide An Essay on the gods of Greece, Italy, and India, in the Asiatic Researches, vol. i. p. 250.

† Picart's Religious Ceremonies, vol. iii. p. 274.

The value of the wine and spirits imported from the eastern islands into the ports of Bengal, Fort St. George, and Bombay, from 1814 to 1818, amounted to 1,359,884 rupees.* And of the same articles it has been computed that a quantity valued at not less than 9,196,221 rupees, had been imported into those places from the united kingdom.† In the six years ending 5th January, 1820, the free trading ships appear to have imported into all parts of India, of beer and ale, 6,282,214 gallons, valued at £535,358 8s. 5d.; of British spirits, 24,808½ gallons, valued at £16,997 5s.; of foreign spirits, 907,255 gallons, valued at £195,937 1s. 1d.; and of wines 1,351,365 gallons, valued at £375,379 9s. 1d.‡ The Company's ships imported of beer and ale from 1814 to 1818,—291 hogsheads, valued at £2057.§ From China, 98,099 rupees' worth of wine and spirits, exclusive of the Company's trade, were also imported into Bengal, Fort St. George, and Bombay, during that time;‖ while the export of wine and spirits from those places to the eastward and other islands in the same period stands as follows :—

In 1814–15,	to the value of	425,436 rupees.
1815–16,	do.	293,720 do.
1816–17,	do.	217,354 do.
1817–18,	do.	267,654 do.

In 1810 were exported from Calcutta to Rangoon, 3,000 gallons of rum alone;¶ and from 1815 to 1818, there were 794 pipes of Madeira wine, valued at 19,290 sicca rupees, and other liquors to the amount of 4,840 rupees, carried from this quarter by American traders.** For further information the reader is referred to the table of imports given in this work at the conclusion of the observations on the spirit trade of China.—A very considerable commerce is carried on, through different parts of India, in the article of jaggory, or native sugar, and the imports and exports of it in the Mysore prove highly advantageous.†† The distillation of the flowers of the Mahwah or Madhuca tree (*bassa latifolia*,) affords a branch of important trade. The people of Bahar make a strong spirit from them, which they sell so

* Parliamentary Report, No. 476, p. 316. The intrinsic value of the Bengal sicca rupee is 24d. 566; Madras rupee, 23d. 247; and of the Bombay rupee, 23d 004, the common or average value of which is 23d. 606; but to avoid fractions, say 2s. the rupee.

† Vide Report, p. 238 and 239. ‡ Ibid. p. 322—25.

§ Ibid., p. 336. ‖ Ibid. p. 240.

¶ Franklin's Tracts on the Dominions of Ava, 8vo. 1811.

** Parliamentary Report, p. 345.

†† For a more particular account of these matters, see Buchanan's Journey through the countries of the Mysore, Canara, and Malabar, 3 vols. 4to.

very cheap, that upwards of an English pint may be purchased for one half-penny, and the most seasoned drunkard can intoxicate himself for that sum.* The tree is nearly the size of an oak, which it strongly resembles; its flowers fall towards the end of February, the juice of which is fermented and used in various ways. The part chosen from which to collect the juice, is the calix or bulb that supports the petals, which are of a pale pink colour. When dried, it resembles a small raisin both in appearance and flavour, and tastes like that of Malaga. The flowers of the Mahwah differ considerably from those of every other tree, bearing a striking likeness to berries, and falling spontaneously as they ripen. They are then gathered and dried in the sun. Vast quantities of those flowers are consumed during the *Hoolee*, or great Indian carnival, and are conveyed in common with grain and other commodities, and sold in various parts of India. Besides their inebriating qualities, they form a considerable portion of the sustenance of the wilder tribes of the Bheels, who, as well as the low castes of Rajpoots, distil them into arrack. The Bengalese also manufacture from them a good spirit. The flowers, whether eaten dressed or raw, are good nutritive food; and from them is expressed a kind of oil resembling *ghee*, or clarified butter, with which it is often mixed. This oil is frequently burned in lamps, and applied as a salve in cutaneous diseases. A more extensive cultivation of the Mahwah could not fail of being attended with many advantages in different parts of central India, and might be equally as profitable to the natives, as the *Agave* to the Mexicans, even were it merely for the purpose of distillation, independent of its other valuable properties.† As it is, the government raises a considerable revenue from it, retaining a right to the fruit and timber. In the opinion of Sir William Jones, were the sale of the liquor which it affords duly restrained by law, it might be applied to sundry serviceable purposes. The same observation is applicable to the drink made from toddy, the vending of which, from want of being properly regulated, renders it so common and cheap that it has been contemptuously called *pariah* arrack, on account of its being a favourite with the lowest order, or *pariahs*, who rank among the meanest castes of India. It is not, however, determined, whether the term *pariah* arrack be used generally to imply an inferior and adulterated spirit, or is only applicable to that liquor with which *Ganga, (cannabis sativa)* and a species of *Datura* have been compounded. At Lahore, drink is taken by weight, and Burnes

* Asiatic Researches, vol. i. p. 303. Oriental Memoirs, vol. ii. p. 452.

† Malcolm's Memoirs of Central India, vol. ii. p. 47.

relates that the prince Runjeet Sing usually took about eight pice; at one entertainment, he saw him quaff the measure of eighteen pice.* Of this chief it is said that he felt greatly annoyed that he could not drink like a fish without being drunk, nor eat like an elephant and escape a surfeit.† His favourite beverage was a spirit distilled from Cabul grapes, which is very fiery, and stronger than brandy. It is told of one of the Mogul monarchs that he was accustomed to drink upwards of twenty cups a day—a quantity equal to five wine-bottles of our measure.

Some of the tribes call spirits *fire water*, probably from the circumstance of their being easily ignited. Jacquemont,† when in the Thibetian mountains, was surrounded with a number of the natives, who, on seeing him burn a little brandy on a lump of sugar and afterwards drink it, exclaimed that he was drinking fire, and must therefore be the devil.‡

The different kinds of grain cultivated in the Nepaul territory, afford ample materials for making intoxicating drink; and hence we find the various tribes, occupying that region, are much addicted to inebriety. So strong are their propensities in this respect, that they make offerings in some of their temples to the priests, who represent their deities, of a portion of their favourite drinks, which they quaff out of human sculls, and so largely, as to cause them to dance furiously; an extravagance often attributed to inspiration. A beverage termed *phaur*, made from rice or wheat, is brewed much in the same manner as our ale which it strongly resembles, and is in considerable repute; and, according to Hamilton, the wheat and barley are reared for the express purpose of making spirituous liquors. At some of the marts where rice or mumma, salt, extract of sugar-cane, hogs, dried fish, tobacco, cloths, bang, opium, and other articles are sold, inebriating beverages form no inconsiderable portion of the traffic.§

As bees are numerous in the north of India, vast quantities of honey are collected, and the mode of doing so is without that cruelty towards the insect which is the practice in other countries.—The cottages have either hollow trunks of trees or cylindrical earthen pots built into the walls in such a manner, that while the insects have access through perforations on the outside to construct their cells, and

* A small copper coin. Burnes' Travels, vol. i. p. 30.

† Jacquemont's Letters from India, vol. ii. p. 22.

‡ Ibid. vol. i. p. 271.

§ Hamilton's Account of Nepaul, 4to.

deposit their stores, the cottagers within can open and shut the hive at pleasure, by different simple contrivances, such as a lifting shutter or sliding door. When the hive has arrived at maturity, the bees are expelled by a great noise made at the inner extremity which drives them out, and by means of a secret valve they are prevented returning until the whole of the honey has been removed. Materials are thus easily procured for domestic purposes, as well as for various drinks, both cooling and nutritive.

Fraser, in his tour, informs us, that the people residing among the hills at the foot of the Himaleh mountains, make intoxicating liquors from grain and other materials, and that they procure from the grapes common to the country two sorts of strong drink, one of a superior kind used by the higher classes and called *sihec*, fermented in the usual manner; the other is prepared by pouring hot water on the residue of the fruit, fermented and distilled by means of an apparatus of a very rude construction.* At Cursalee, on the Jumna, he observed that they intoxicated themselves with a sort of beer brewed from grain and particular roots which they sharpened with pepper. During his stay there, he witnessed the ceremony attendant on the bathing of the images of their gods in the waters of the Jumna. The concourse of people was immense; they danced in the most grotesque and savage manner, to the sound of strange music under the influence of their liquors, a multitude of men taking hands, sometimes in a circle, sometimes in a line, beating time with their feet, bending and distorting their bodies in various ways. The men kept dancing all the day, and in the evening were joined indiscriminately by the women, who supported the dancing and revelry till the night was far advanced. This frantic kind of worship was continued for several successive days, and mostly ended with the exhaustion of their liquors.†

The people inhabiting the Garrow hills, north east of Bengal, though extremely rude and uncultivated, have, according to Mr. Elliott, various sorts of drinks; but that most in use is drawn from rice soaked in water three or four days. From the *kebul*, a tree resembling the palmira, a fine spirit might be made, as it possesses much saccharine matter; but the inhabitants are too ignorant to appreciate its value and turn it to good account.‡

* Tour to the Sources of the Rivers Jumna and Ganges.

† Tour to the Jumna and Ganges, p. 492.

‡ Asiatic Researches, vol. iii. p. 22.

In Cashmere, a good wine is made resembling Madeira, and brandy is distilled, which, according to Jacquemont, resembles a mixture of bad *Anisette*, with indifferent *Kirchenwasser*. The vines, particularly in the gardens, are gigantic, and some of them, though young, have been found to measure two feet in circumference.*

The Afghanistans prepare a strong drink from the milk of sheep, which is said to possess a very invigorating property.† These people are not wholly dependent on this species of liquor, since the Greeks and Armenians, who settled in that country, distil spirits and make wine to a considerable extent. About Cabul, grapes are so plentiful as to admit of exportation; and cattle are fed on them for three months in the year. Of the Afghanistan grapes there are ten different kinds. The best grow on frame works; the inferior are suffered to creep on the ground. Pruning takes place in the beginning of May. The people of Cabul convert the grape into more uses than the inhabitants of almost any other country; they employ its juice in roasting meat, and during meals have grape-powder for a pickle. This powder is made by drying unripe grapes and pounding them afterwards: it looks like Cayenne pepper, and has a pleasant taste. Grapes are often purchased for a half-penny a pound, large quantities are preserved as raisins, and grape sirup is in great consumptio . In the city of Cabul, during the month of May, the *Falodish* is in high estimation. This is a white jelly strained from wheat and drunk with sherbet and snow. There are no date trees at Cabul, but they are to be found about Candahar and Pashawur, yet the people are ignorant of extracting from them any intoxicating material. In Afghanistan, the grains of a species of rice are so long, that fourteen of them are said to make a span.

The vines in some parts of Afghanistan are not cut or pruned, but allowed to ascend the highest trees; and they are sometimes found growing on lilyoaks about eighty feet from the ground. The grapes thus produced are inferior to those reared on frame work. The *amor patriæ* is so prevalent here, that every one conceives his own nation to be superior to all others. Hence the emperor Babu, whose memory is still held in the greatest respect in Cabul, thought no portion of the world equal to his own, and used exultingly to say, "This climate is extremely delightful, and there is no such place in the known world. Drink wine in the citadel of Cabul, and send round the cup without stopping, for it is at once a mountain, a sea, a town, and a desert."

* Forster's Journey, &c. vol. ii p. 21. Jacquemont's Letters.

† Elphinstone's Account of Cabul, &c. 4to. p. 236.

In Cabul, the Armenians are the principal dealers and manufacturers of intoxicating drinks, but the present governor, with the best intentions, has put an end to the Armenian influence by a strict prohibition of wine and spirits. Hence the Armenians, together with the Jews, have fled to other countries, as they had no means of support but that of distilling spirits and manufacturing wine. Previous to this edict, 40 bottles of wine or 10 of brandy might have been purchased for a rupee.

Among the fruits of Bokhara, melons are in the highest estimation; water-melons in particular have a superior flavour, and grow to such an enormous size, that twenty people may feast on one, and two of them are said to form a load for a donkey: they afford a delicious cooling beverage. In that country, there is a curious and common substitute for sugar, called *Turunjubeen*. It is a saccharine gum which exudes from the well-known shrub called *camel's-thorn*, or the *Khari-Shootur*. Towards the end of August, when this shrub is in flower, it may be seen in the morning covered with drops like dew, which, when shaken into a cloth placed beneath the bush, is the *Turunjubeen*. Some hundred maunds of it are collected annually, and the whole sweet-meats of the country are prepared with it. From its nature and properties, it strongly reminds us of the *manna* given to the Israelites.

From grape jelly, or sirup mixed with chopped ice, the Bokharians draw what they term *rahut i jan*, or the delight of life. Here ice is an indispensable article: in winter, it is stored in pits, and sold in warm weather at a very low price. No one drinks water in Bokhara without icing it, and a beggar may be seen purchasing it, while he proclaims his poverty and implores the charitable bounty of the passengers. The water, which the king drinks, is brought in skins under the charge and seals of two officers. It is opened by the vizier, first tasted by the people, and then by himself, when it is once more sealed and despatched to the king. The daily meals of his majesty undergo a like scrutiny; the minister eats, he gives to those around him; they wait the lapse of an hour to judge of the effect, when they are locked up and despatched. His majesty has one key and his ministers another. Fruit, sweet-meats, drinks, and every eatable, undergo the same examination.

In Bokhara, there is a disease called the *Mokkom* or *Kolee*, a kind of leprosy that renders the skin dry and shrivelled, the hair of the body falls off, the nails and teeth drop out, and the whole frame assumes a horrible appearance. This disease is prevalent in the rice districts, and is said to be caused by the use of *bouza*, a strong drink distilled from black barley.

Honey is abundant in Bokhara and the adjacent countries; but it is not much employed as an ingredient in the beverages. Captain Burnes states that he observed bees feed on mutton, that in winter they are often supported with flesh instead of sugar; that which he saw given to them was fresh; and he adds, that they sometimes attacked dried fish.

Throughout the whole continent of India, the people are well acquainted with the different virtues of all the species of palm. Of these, the cocoa-nut tree *(cocos nucifera)* is the mos tvaluable, as it not only affords food but a large supply of toddy, though not in so great a quantity as the palmira. The date tree *(phœnix ductylifera)*, the Tamar of the Hebrews, yields toddy also, but neither so much nor of so good a quality as that which is produced by the other species of palm. This tree, as well as those of the same genus, has been the subject of great research and investigation with many eminent writers, of whom Larcher, in his learned notes on Herodotus, has been elaborate; after him Pontedora, Tournefort, and Kæmpfer may be consulted; the latter, in his Amœnitates Exoticæ, has been happily minute in illustrating this portion of natural history.

The skill and ingenuity which the inhabitants of India generally display in making intoxicating beverages from the produce of their trees, as well as from other portions of the vegetable kingdom, have been clearly exemplified; and the ease with which they are procured, and the habits, therefore, which their use has engendered, have tended much to the injury of Europeans and natives, both in a moral and physical point of view. Dr. Buchanan, however, has questioned this, particularly as repects health; and observes, that intoxication is less frequently a cause of disease, than is usually alleged; it chiefly, he says, proves injurious to the health of our seamen and soldiers in warm climates, by making them imprudently expose themselves to other causes of sickness. "The two persons in my service," continues the Doctor, "that are *most subject to fevers* are my interpreter and painter, although from their situation in life, they are exempted from all hardships; but from their caste, they ought not to taste spirituous liquors, and are really sober men. At the same time, a man who takes care of my tents, although he is exposed to all weathers, and at times to much fatigue, enjoys perfect health, probably keeps off the fever by copiously drinking spirituous liquors, to the use of which he is exceedingly addicted." But with all due respect for the Doctor's opinion, this example should not be received as a precedent, because it is well known, that those who are addicted to a slavish use of ardent spirits, are more subject to

disease, than those who use them with moderation. In India, as in Europe, where the cholera morbus has been so fatal in its effects, it has been proved that drunken and dissipated characters were the first and most numerous victims of that terrible disease.

"Drinking spirituous liquors," says Heber, "is highly injurious to our soldiery in India. Nothing can be more foolish, or in its effects more pernicious, than the manner in which spirits are distributed among the troops. Early every morning a pint of fiery, coarse, undiluted rum is given to every man; and half that quantity to every woman; this the greater part of the new comers abhor in the first instance; or would, at all events, if left to themselves, mix with water. The ridicule of their seasoned companions, however, deters them from doing so, and a habit of the worst kind of intemperance is acquired in a few weeks, more fatal to the army than the swords of the Jâts, or the climate of the Burmese. If half the quantity of spirits, well watered, were given at a more seasonable hour, and, to compensate for the loss of the rest, a cup of strong coffee were allowed to each man every morning, the men would be quite as well pleased, and both their bodies and souls preserved from many dreadful evils."*

Captain Mundy, who had a good opportunity of forming a correct opinion of the matter, says, that many a liver complaint, laid to the charge of an Indian climate, owes its origin to this lava-like potation; alluding to the general use of arrack, and its cheapness unfortunately adds to its fascinating qualities, which are further heightened by an infusion of *chillies*, to render it the more intoxicating.† Speaking on this subject, Hamilton observes, that one cause of the prevention of the spread of Christianity in India, may have been occasioned by the dissolute lives of some of the early Christians; and the clergy not only indulging in the use, but actually trafficking in the sale of arrack; a practice equally obnoxious to the Brahmins and Mahometans.‡

The kingdom of Thibet, although not so early known to Europeans as some other eastern countries, yet we were partially acquainted with it from the visit of Marco Polo. He observed that the Thibetians had no wine, but an excellent drink made from corn or rice, flavoured with various spices. Oderic, in 1318, found bread and rice-wine in that country in abundance. Turner, in the account of his embassy to the Teshoo Lama, makes us more familiar with the arts, manners, and customs of the Thibetians. They cultivate wheat, barley, and

* Heber's Narrative, vol. iii. p. 201.

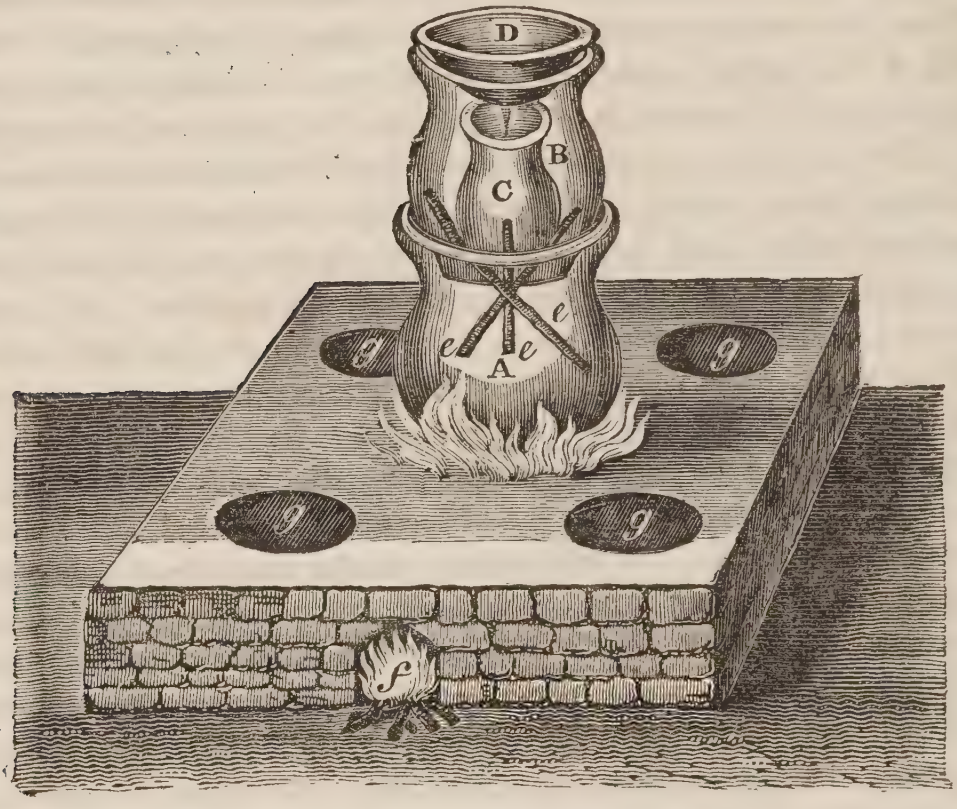
† Pen and Pencil Sketches in India, vol. ii. p. 215.

‡ Vide Hamilton's Account of the East Indies.

rice, although the state of agriculture is not by any means in a flourishing condition. They extract from rice or wheat, a drink which is called *chong:* this beverage is prepared by an infusion of grain in a state of fermentation; wheat, rice and barley are used indiscriminately. To a given quantity of grain, is added rather more water than will completely cover it; and the mixture is placed over a slow fire till it begins to boil. It is then taken up, the water drained off, and the residue spread on mats, or coarse cloths, to cool. When cold, a ball called *bakka*, composed of the blossoms of the *cacalia saracenica* of Linnæus, is crumbled over the grain and mixed with it. The common proportion is one of these balls, about the size of a nutmeg, to two pounds of the grain. After this process, the grain is put into baskets lined with leaves, and slightly pressed down with the hand, so as to squeeze out the superfluous moisture It is then covered with leaves and cloths to defend it from the air, and put into a place moderately warm, where it is allowed to remain for three days. At the end of this period, it is put into earthen jars, when cold water is poured on the top in the proportion of a tea-cup full, to every gallon of grain, and the top of the jar is made close with a strong compost of stiff clay. In this state it remains for at least three days, before any of it is taken out for use; but, if suffered to continue longer, it improves by age. When *chong* is wanted, a quantity of this fermented mass is put into a capacious vessel on which boiling water is poured, until it is completely covered by it. The whole is well stirred together, and, after remaining a short time to settle, a small basket of wicker work is thrust into the centre, and the infusion called *chong* immediately drains through and fills the empty space with the liquor. The drink is then distributed to those around by the segment of a gourd fastened upon a staff in the form of a ladle; each person holding a shallow wooden cup on the points of his fingers for its reception. This liquor is accounted pleasing and grateful, having a slightly acid taste, but possessing little intoxicating qualities. From the nature of this liquor and the peculiar manner of making it, it is evident that the invention is purely oriental, as there is nothing in Europe of a similar description from which any idea of such a manufacture could have been borrowed. Chong is also used for distillation, and from it a very powerfully inebriating spirit is drawn, termed *arra*. The apparatus employed for this purpose must appear, from an examination of the annexed plate and a perusal of its description, to be of a simple and rude construction. *Chong*, or *arra*, is always served to visiters, both on their arrival and at their departure,

without regard to the hour, and, contrary to the practice of Japan and China, it is never drunk warm.*

STILL USED IN THIBET AND BOOTAN.



A. An earthen vessel, in which the chong is placed, immediately over the fire.

B. Another without a bottom.

C. A smaller earthen vessel, which is the recipient.

D. An iron basin filled with cold water, renewed occasionally as it grows warm, and may be termed the condenser.

e e e. Three cross staves of wood on which the recipient is placed.

The junction of three vessels, A, B, and D, being secured with cotton bandages and clay lute, a fire is lighted under A, which contains the chong. The spirit rises through B, is condensed upon the convex bottom of the basin D, and the spirit *arra* is received into the smaller vessel C.

f. The fire-place—*g g g.* openings over the fire for the reception of a similar apparatus.

* Turner's Embassy, 4to. p. 343.

The religion of the country confines the consumption of *chong* and *arra* to the laity, as those who assume the robe of Gylong, or priest, are bound to abstain from every sort of inebriating drink, as well as from animal food, lest they should be the indirect cause of putting an end to the existence of any creature. This privation seems to have been felt by Gyeung, the mother of the infant Lama, who, when entertaining Mr. Turner, at the monastery of Terpaling, complained that while nursing the young pontiff, she was not allowed to use any kind of fleshmeat, or exhilrating liquor.

In Bootan, Turner observed thriving crops of wheat and barley, and a small grain which he does not designate by any name, from which a fermented liquor is made. In this country, the traveller is always found with a buffalo's horn slung across his shoulders filled with *arra* to regale himself, whilst struggling among the acclivities of this mountainous region. The Rajah of Bootan, the high priest, or pope of the country, when he invited Mr. Turner to an entertainment at the palace of Tassisudon, declined tasting wine, being contrary to the rules of his sacred order; but here, as elsewhere, human weakness is observable; for claret and raspberry jam, having been left by Mr. Turner as a trial of the Lama's virtue, it soon disappeared, and application was made a few days after for a fresh supply of the wine; certainly, as the writer observes, with no intention that it should be reserved among the relics. Before a battle, the soldiers of Bootan take copious draughts of chong or arra, having previously charged their stomachs with an ample meal of substantial food. This drink is here usually taken warm, a practice recommended for imitation, whenever heat and fatigue lead to intemperate thirst. In Bootan, the people seem unacquainted with mead, although bees and honey abound. So domesticated are these insects, that the honeycombs hang from the balconies of the houses clear of the walls, seldom exceeding six inches in thickness and sometimes three or four feet long. The bees are not suffered to be disturbed, the Rajah conceiving that their labour is employed for the benefit of the community, in laying up a stock which serves to rear their young, and as a resource when they cease to find food abroad. "Were I," said he, "availing myself of superior power, to deprive them of this store, accumulated for their future support, how could I expect to enjoy unmolested, that of which I am myself possessed?"—Hence the religious protection they experience.

Although the vine, it may be generally observed, forms no part of the common agriculture of the East Indies, yet delicious grapes are found to grow luxuriantly in many of the provinces; those of Malwa

have been long celebrated, and the wine made at Nishapore is considered excellent. The grapes of Cabul yield a liquor no way inferior to many of the wines of Europe. Even on the northern slope of the Himaleh mountains, reaching towards Thibet, grapes are indigenous, and grow in the open fields without any care, save that of preserving them from the depredations of the bears. In flavour and delicacy, they vie with any hot-house grapes of England; and are of two sorts, white and red.

In the Birman empire are several kinds of palms; wheat is common, and of good quality, in different districts of the country; the cocoa-nut and sago-palm grow wild; rice and sugar-canes are to be met with every where; vines are found in the forests, and though they are at present inferior to those of Italy, Spain, or Portugal, yet it is asserted, that the inferiority is owing to want of proper cultivation. No wheat is reared in Pegu; but bread made from rice is a common article of food: wine from the latter grain, such as is found in many other parts of the East, is here familiar, and from which the monarch draws a portion of his revenue. Sugar, although it might be plentiful in Pegu, and a spirit made from it, yet the elephants are permitted to consume the canes with so little restraint, as to render its produce unavailable. Here, and in other parts of India, the elephant makes nightly excursions into the plantations; and when once allowed to do so with impunity, he constantly repeats his destructive visits. In some places, when the marks of the animal's feet are discovered, in order to prevent a repetition of these predatory incursions, sugar-canes filled with bruised fruit, of which this animal is fond, are placed in his way; a quantity of poison is infused in the pulpy matter; the outside of the canes is marked with salt, to which the elephant is very partial, and having gratified himself by feeding on these materials, he either dies from their effects, or is so intoxicated that he becomes an easy prey to the people. As the Peguese profess the worship of crocodiles, their common drink is the waters of the ditches in which those rapacious animals live, though they are often devoured by them. A liquor distilled from the cocoa-nut is used in some parts of Pegu which differs little from common arrack: this drink is fermented and preserved in well-glazed earthen jars, some of which, according to Hamilton, are so capacious as to contain two hogsheads. Another description of liquor, very agreeable to the palate, is made from juice drawn by incision from a tree called *Annipa* or *Niper*, and hence termed *Niper* wine. From Syrian, the Peguese export rice-wine of their own manufacture. The city of Pegu receives much of its ornament from the numerous cocoa trees with which the sreets are tastefully

planted, and while they afford the citizens a supply of fruit, serve as a cooling shade from the scorching heat of a vertical sun. Throughout the whole of the Birman empire, the chief spirit in use is *shou chou*, or that description of ardent liquor which is distilled in China. Symes says, that he met with no other, and that it appeared to him a very fiery, deleterious spirit.* More recent visiters met with several kinds of wines among the Burmese, and, at the entertainments of the higher orders, drinks are served up in small jars, out of which they are poured into gold cups, richly embossed with figures and ornaments of different descriptions; amongst some of which were observed the twelve signs of the zodiac. These cups, when filled, are usually presented by the attendant in a crouching posture, for an inferior to stand before a superior is deemed insulting: and when water is presented with the liquor, it is taken from a jar of cold water, wrapped in a plantain leaf to keep it more cool. During the late war with Great Britain, it was found that the Burmese had a great predilection for spirits, and would rather be recompensed for any exertion by a little English gin or brandy, than with money. "*Bevandi, pay, tekein*"—(Give some brandy, prince!)—was the constant request; and so much has this request taken root, that it will require many regal edicts to make them again abstemious.

By the laws of Alomprah, the founder of the present empire, intoxication was punishable with death; but, during the prevalence of cholera, spirits being deemed useful in checking its progress, the interdict was taken off, but again put in force when the disease disappeared.†

Late travellers have described the remains of religious edifices in Pegu and Ava of the pyramidal form; and of sphinxes, griffins, mermaids, crocodiles, and other templar ornaments, so resembling those of Egypt, as to lead to the inference that there was a former connexion between the religion of the ancient inhabitants on the banks of the Nile and the Buddhists of the East. This is a corroboration of what has been already advanced, that the eastern parts of Asia had the precedency of the west in a knowledge of the arts; and it is further confirmed by the paintings that have been found in some of their ancient pagodas, far excelling any thing of the kind at present among the Burmese; while no modern architectural edifice in those countries can bear a comparison with the structures of modern times, notwithstanding the progress of civilisation and the mechanical

* Symes's Embassy to Ava, 8vo. vol. ii. p. 307. † Two years in Ava, 8vo. p. 307.

improvements in other parts of the world—a proof that, while we have been advancing through their discoveries, they have been retrograding.

Arrack is drunk in Siam; but its consumption, as well as its manufacture, is confined to the Chinese resident in that country. The privilege for its distillation brings to the government a sum of 460,000 ticals, or £57,500 per annum, for the whole kingdom. The greater portion of arrack is distilled at Bankok, the capital; and the rest at thirteen other principal towns of the kingdom. The tax on arrack is farmed; hence its amount has been ascertained with a considerable degree of accuracy. The following detail will shew the relative importance of some of the towns at which it is distilled:—

	Ticals.
Bankok, or Bangkok	144,000
Yuthia, (the old capital)	48,000
Sohair,	8,000
Tachin,	8,000
Raheng,	8,000
Kampeng,	8,000
Chainat,	1,600
Lanceang, (capital of Laos)	24,000
Korat in Lao,	16,000
Kanburi,	1,600
Champon,	2,400
Patyn,	1,600
Chaia,	640
Talung,	2,400

Besides this, there is likewise a tax on fruit trees. At Penang, among the duties levied are those on opium, spirits, and hemp used as an intoxicating drug. Here the distillation of arrack from rice is conducted, but not to any great extent. Tannasserim is celebrated for its *Niper* wine, or rather for the spirits distilled from it, and which is considered the best in the East. The Siamese, being strict followers of Buddha, like the Mahometans do not indulge in the pleasures of intoxication, strictly fulfilling the fifth commandment of their religion, which is, "you shall not drink intoxicating liquor, nor any substance calculated to intoxicate." Still, however, there are amongst them many who, like their fellow-mortals in other parts of the world, forget, not only the principles of their religion, but that respect which they owe to themselves and to society. Mr. Finlayson, when there in 1822, remarked, that ardent spirits were frequently taken at meals undiluted, but not to such extent as to cause inebriety. Most of their liquors are taken warm; and they assign as a reason for using it in that state, that cooling remedies are deadly,

from a belief that heat is a principle of life. Mr. Crawford is of opinion, that a strong passion for arrack, notwithstanding the prohibition against it and vinous liquors, appears nowhere more general, than amongst the lay Siamese; and although their Talapoins or priests, are enjoined to abstain from the use of wine, or intoxicating drugs, yet he suspects they are subject to a similar infirmity. They freely partake of tobacco and the preparation of *betel* and *areca*, from which he concludes that they secretly indulge in all these forbidden luxuries. The government feigns to take considerable care to enforce the observance of the prohibitory law; but it is certain that they wink at its infringement, in a manner very discreditable, since they receive the duty not only on its manufacture but on its sales. No present is more acceptable to the lower classes than a supply of ardent spirits; yet upon the whole, the Siamese are a moderate and temperate people.* The use of the areca and betel-nut is more extensive here than in any other part of the east, exceeding even in this respect the consumption in Malay. Rich in all the valuable productions of nature, Siam has vast advantages; rice is cultivated to great extent, and the sugar-cane affords employment to an immense portion of the population. The strength of the soil may be conceived from the enormous size of its yams, one of which was found to weigh 474lbs. and to measure nine and a half feet in circumference. The sugar-cane in Siam has been known from the earliest period; but its culture, in reference to useful and extensive purposes, was little attended to before 1810. This favorable change was wholly owing to the industry and enterprise of the Chinese settlers, resulting from various concessions yielded to them. In 1822, they exported to the extent of 60,000 piculs, or about 8,000,000lbs. of sugar, esteemed, from its whiteness and flavour, the best in India: this article now meets a ready sale in China, the western parts of Hindostan, Persia, Arabia, and even in Europe. The canes planted in June are cut in December, and the sugar brought to market at Bankok, in January. The cultivators of the cane are always Siamese; but the manufacturers of the sugar are invariably Chinese. From some districts, palm sugar is largely exported, and such is the abundance of grain, that a farmer expects forty-fold for the seed which he sows, and he would consider thirty-fold but an indifferent crop. Some of the rigid Siamese priests consider that the punishment in the other world, for the crime of drinking, shall be to have a stream of melted copper poured perpetually down the throat. From the flourishing state of

* Crawford's Embassy.

the sugar plantations, the ingenious Chinese will, no doubt, manufacture rum from the molasses and render it a staple commodity. The chief food in use with the Siamese is rice, and of this, there are several kinds, such as white, red, coarse, and fine. Countrymen alone eat red rice; the black is only used mixed with sugar, and the pulp of the cocoa nut scraped over it. Fine rice is seldom thicker than a needle and is as transparent as crystal; but it is used only in feasts and at festivals; a certain quantity of it is sometimes dressed with a fowl, a quarter of a goat, or a piece of fresh pork. This ragout is called *poulo*, and in colour is as white as snow; but this description is seldom or never employed in distillation. The king derives an immense revenue from rice; those dealing in it pay a sort of license to the amount of £35 annually; and of these there is an incredible number. This, as well as most other branches of industry, is principally carried on by the Chinese, whose labours are as conspicuous abroad as at home; they, with a peculiar economy, seldom let any thing go to loss, and as the distilleries are in their hands, they employ the feculence of the stills in feeding pigs, as the sale of all other butchers' meat is prohibited on the principle of the metempsychosis; animals being considered the sanctuary of their deities. What a ridiculous anomaly; as if pigs were not to be ranked amongst the animal creation! By them, swine's flesh is deemed a great luxury, being, as they think, more delicate and easy of digestion than any other food; hence it is prescribed by their Doctors to convalescents, in preference to poultry or boiled meats, as the best renovater of the constitution. The Chinese are very particular in the feeding of swine, as they study to impart a sweetness and tenderness to the flesh seldom observed by others. The apparatus employed in the distilleries is on the same principle as that generally used by the Chinese elsewhere. The Siamese fall short of them even in this respect, as they understand nothing of chemistry, although they affect it and boast of profound secrets in the art. The mania of discovering the philosopher's stone prevailed here, as well as in China; and one of the Siamese monarchs is said to have spent two millions of money in search of this visionary talisman. The Siamese have also been long occupied in the foolish inquiry after an universal elixir to render them immortal. In using brandy, they have it served up for the most part in a large bowl, on a wooden plate sufficiently capacious to admit a number of small pots, in which are commonly either dried or roasted fish, fruits both pickled and salted, with baked or hatched eggs; the latter of which are considered a great treat. On such occasions, each helps himself to whatever is most grateful to his palate, and takes from the

bowl a draught of the brandy by means of a little cup, which is floating on the top; conversation being all the time kept up with much vivacity.

Honey is very plentiful in Siam and several pleasing beverages are made from it. The bees hive on the trees in the open air, and those, on which it is intended that they should construct their combs, are cut at certain distances, from twenty feet above the base to the apex. Holes are made in them, in which are inserted pieces of wood projecting about three feet from the trunk. Round this artificial branch, the bees never fail to form their hives; and it is no uncommon thing to see three hundred of them on a single tree; the best of the produce may be purchased at three half-pence a pound.

The States of Assam, Laos, Cambodia, and Aracan, furnish few materials of interest differing from those of the kingdoms just described. They yield the same fruits and the inhabitants apply them to the same purpose. In Aracan, they tap the palm, and either drink its juice in the state of toddy or distil it into arrack. The fertile country of Cambodia produces excellent rice, from which, as in Siam, they manufacture a good spirit: sugar is also reared, but in a limited manner. In Assam, they make no wine, though they have excellent grapes, which they dry to make brandy; but although the more ardent beverage is preferred, yet the people are not characterized as drunkards. On the whole, it may be said, that agriculture is much neglected in the eastern peninsula of India; nature being so bountiful in the spontaneous productions of fruits and vegetables, as to render manual labour almost unnecessary; hence the natives seldom take advantage of the richness of the soil to increase the gifts of providence, or administer to their own luxuries.

In Malacca, rice is the principal grain cultivated: the quantity is not sufficient for the support of the people, but the deficiency is supplied by a peculiar preparation of the produce of the sago, or bread palm tree. This tree, which requires no cultivation, rises to the height of from twenty to thirty feet, and is from five to six feet in circumference. The bark is very thick, and has, within its fibres, a kind of gummy powder resembling meal, which is extracted by a scoop. This substance, when thus procured, is diluted in water and strained through a cloth, and allowed to evaporate for some time: it is then put into earthen vessels of various forms, where it remains and hardens. This paste or flour may be kept for several years; it is accounted nourishing and wholesome, and considered an excellent remedy for many complaints of the stomach. When blended either

with cold or boiling water, it forms a whiteish jelley very palatable; and, if fermented, produces an agreeable beverage. The Malay chiefs rear considerable plantations of the sago tree, as it forms one of their principal sources of subsistence. There are several descriptions of palm in the country, yielding toddy, some of which are largely drawn on by the natives.

In the Nicobar islands, the use of inebriating beverages is very prevalent. The inhabitants, being unaccustomed to wine, do not like it; yet they are said to drink bumpers of arrack at their feasts, till they can no longer see. Their principal and common beverage is the milk of the cocoa-nut, and a liquor called *soura*, (in some of the islands, *taury*,) which is nothing more than the fermented juice of the palm: this, they render highly intoxicating by the method they employ of sucking it through a tube made either of a reed or quill. These people are so very ingenious, that, according to Forbes,* they convert the cocoa tree to almost every possible useful purpose. Their vessels are built of it, the cordage, rigging, and sails are made of it, and it furnishes even the cargoes of arrack, vinegar, oil, sugar, cocoa-nuts, black paint, and other inferior articles, exported to the neighbouring islands. They are so remarkably honest and unsuspicious of fraud, that the crime of robbery is so little known as not to be dreaded. Their houses are left constantly open, so that any one that pleases may enter; and, when going to a distance, the traveller is at liberty, when he finds himself either tired, hungry, or thirsty, to go into any house, and help himself to both meat and drink, which he frequently does, without being questioned, or even interchanging a word with any of the family. How happy would it be for mankind, were such hospitable practices more common in the world!

The island of Ceylon, being one of the most remarkable in the Indian ocean, deserves particular notice, not only from its soil and produce, but from its being the early resort of Europeans trading to the Eastern continent. Some assert, that it was peopled by a colony of Singhs, or Rajhpoots, 500 years before Christ; and the people of Malabar are said to have invaded it about 300 years after that period. The Macedonians, who accompanied Alexander on his Indian expedition, were the first who brought to Europe an account of this island, under the title of Taprobane. Dionysius, the geographer, who flourished under Augustus, speaks of its elephants—Ovid and Pliny mention it; and it has been alluded to by several early writers as being well peopled, and in a high state of civilisation. With the manners and customs of its ancient inhabitants, we have not been made

* Oriental Memoirs.

acquainted; nor with the nature of their beverages; but it is unquestionable that they were the same, with, perhaps, some local variations, as those of their continental neighbours. At marriages, immense quantities of meat and drink are consumed; the same practice is prevalent at funerals; but the indulgences on all occasions of death are confined to houses adjoining that of the deceased; and where the male sex are accustomed to assemble and partake largely of *Soura*. On the anniversary of a deceased friend, men and women indiscriminately assemble. *Soura* is consumed in abundance; and when the mind is in a high state of intoxication, the women, at a certain hour of the night, when the commencemeut of the ceremony is announced by the striking of gongs, set up the most dismal howls and lamentations. The party then walk in procession to the grave of the deceased. There, a woman, nearest akin to the inmate of the tomb, steps out of the crowd, and, tearing up the skull, she screams most piteously; then washing it with the cocoa juice, or some other liquor, rubs it with an infusion of saffron; rolls it carefully up in new cloth and replaces it in its mansion of rest. Thus the night is spent going from grave to grave, repeating the same ceremonies, and the morning sun is welcomed in with copious potations of *Soura*. The modern inhabitants are rather a temperate people; but, unhappily, they have had a bad example set them by Europeans, and many of them at present are not exempt from the charge of excessive indulgence in the sensual gratification of drinking. At the time the island was first visited by the Dutch, intoxication was considered a heinous offence; and great astonishment was expressed at the attachment which the Christians evinced for strong liquors. The king of Candy, on one occasion, having called a Dutch merchant into his presence, in whom he placed great confidence; but who was in the habit of indulging in this propensity to excess, exclaimed, "Why do you thus disorder yourself—so that when I send for you on business, you are not in a capacity to serve me?" The other, who was not altogether overpowered by his glass, ingeniously excused himself by replying, "that as soon as his mother had deprived him of her milk, she supplied the want of it with wine; and that ever after he had accustomed himself to it." Hence the Cingalese adage—"Wine is as natural to white men as milk to children.*

Among the various kinds of trees found in this delightful island is the *kettule*, which seems to be the same as the *kebul* already

* Knox's Ceylon.

mentioned. It yields a very sweet sap of wholesome quality: one of the ordinary size will afford several quarts of juice in a day. From this juice, a sweet spirit is made, similar to that drawn from the palm tree. When the buds on the top of the *kettule* become ripe, and wither away, they are annually succeeded by others still wearing year after year down the branches, until they reach the trunk, and in this stage the tree may be said to be worn out. The wood is so hard, that it is frequently used for pestles in pounding rice. This island bears the sugar-cane, as well as all the fruits of the Indies; and the canes produce every month of the year, except the three rainy ones. Rice is abundant, of which there are five different species; and from this grain, for many years back, large qnantities of arrack have been manufactured. The average annual export may be estimated at 5600 leagers of 150 gallons each. The great marts for this article have hitherto been Madras and Bombay, with the Malabar and Coromandel coasts; here, it is sold for about one shilling and three pence per gallon; the prime cost varying from eight to ten pence per gallon—a duty of ten per cent. is levied on the exports. During the years 1815, 16, and 17, some hundreds of leagers were brought to England, and sold at from five shillings and six-pence, to six and six-pence per gallon. The revenue arising from arrack, in Ceylon, is very considerable; in the land rents are included the duties on cocoa-nut trees, which exceed that on rice by £14,573 annually; the charge on the former being £35,573, and that on the latter, £21,000.—The following are the particulars of the duties levied on the cocoa-nut plantations of 1831:—

Distillation of arrack, ...	£ 3,645
Retail of do.	24,975
Export of do.	3,136
Export of rope made from the tree, .	153
Export of jaggory, ...	162

There are a few Europeans who distil arrack and rum from sugar, and which to them is a source of great profit.

This island is remarkable for its woods of palm trees; and so early as the time of Marco Polo, palm wine was the current beverage; yet so cautious were the natives of its effects, that those, who were addicted to it, were held as disreputable witnesses in a court of justice. From the *Borassus flabelliformis*, sugar is extracted, as in India, and the persons employed to manufacture it are denominated *hakooroo*; their business, according to Davy,* is to prepare it from the

* Davy's Account of Ceylon, 4to.

juice of different palms, but chiefly from that species termed *ketoolga, (caryota urens)* which contains the largest proportion of saccharine matter. For the lands they farm they have to furnish a certain quantity of jaggory annually to the king's stores, and to supply the chiefs with that article and with toddy, the drawers of which are named *usanno*, and belong to the caste of the *Chandos Mandinno.*

A very strong kind of arrack, possessing an unpleasant heavy smell, is distilled from palm-wine and the bark of a certain tree; this spirit is termed *vellipatty;* another sort is also made from nearly the same materials, and is known by the name of *talwagen.* The *palpalam*, or milk-fruit, which abounds in the woods, both in shape and size, resembles an olive; it conceals under a thin yellow rind a white gluey moisture, very sweet and tasting like cream. Bears and wild boars are fond of it, and the natives dry it in the sun after which it tastes like raisins, and might yield a brandy not inferior to that fruit, but it has not yet been converted to any fermenting process. Arrack is distilled in every village all round the coast, and the great source from whence it is drawn is from the juice of the cocoa-nut and palmyra tree. Whole woods are set apart for no other purpose than that of procuring toddy. The saccharine quality of this liquor is so great that it produces a yeast similar to that of our malt worts, and is used by bakers instead of barm. Not only in Ceylon, but in various other quarters of the east, the cocoa tree is the most valuable gift which nature has afforded to the indolent natives, as it yields almost every thing calculated to sustain and sweeten life. Viewing it in this light, and in reference to its application to this island, a sensible writer has observed: "Give a man a cocoa tree, and he will do nothing for his livelihood—he sleeps under its shade, or perhaps builds a hut of its branches—eats its nuts as they fall—drinks its juice, and smokes his life away."* The word *cocoa* is said to be derived from the Portuguese *coco* or *coquin*, the name for a monkey, the three holes at the end of the nutshell bearing some resemblance to the head of that animal. At the time the two Mahometans visited Ceylon, so far back as the year 851, they found the people expert in making shirts, vests, and tunics, all of one piece, of the fibres of the cocoa-nut, and skilful in various works of mechanism formed from its materials. This tree is so productive, and yields its juice so freely that it may be said to be choked in its own exuberance, so that to assist it in the munificence of its overflowings during the season of its

* Heber's Journal of a Tour in Ceylon, vol. iii. p. 146, 153.

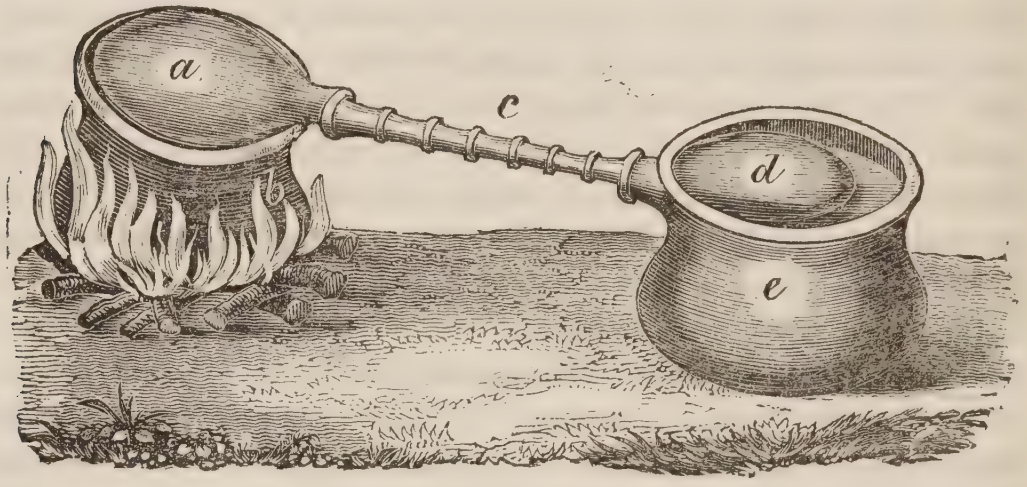
vintage, it must be relieved by frequent incisions for the discharge of its precious liquor. The Cingalese strip off a species of net-work from this tree, and use it as a strainer for their *toddy*, to free it from impurities and the innumerable insects which its sweetness attracts. The Otaheitans use this bark net-work as a sieve for straining arrow-root, cocoa-nut oil, &c.; they often join pieces of it together, and use it as a covering to save their more valuable bark clothing: it is also remarkable, that to the water of the green cocoa-nut is ascribed the property of clearing the face of all wrinkles and imperfections, and imparting to it the rosy tints of youthful days. Besides the copious stream of toddy which it affords, by a similar process another fluid of a more pure and limpid quality, called *mirra*, is obtained, from which jaggory is manufactured. Cordiner and others assert, that the toddy drawn from the palmira tree is considered to make better arrack than that procured from the cocoa, and both the toddy and pulp of the fruit yield a sugar which is highly esteemed in the neighbouring parts of India. This sugar is of a dark colour, an imperfection which might be easily remedied by a proper process of refining: when exported, it is packed in the leaves of the tree to which it owes its origin, and in that state is delivered to the purchasers. Percival calls the palm from which this sugar is obtained, the *sugar tree*, and he is of opinion that, if properly attended to, the natives might obtain from it such large quantities of sugar as to render it a substitute for the cane, and afford sufficient material for the distillation of rum. There is not a province in Hindostan in which this tree grows to so great a height as in Ceylon. Its umbrageous top gives splendour to the humblest hamlet round which it is planted, but, as it is here usually to be met with in groves, it is curious to behold with what dexterity the natives climb its straight and slender trunk in order to suspend the *chatty* or earthen pot on the branches, for the purpose of procuring the juice. Having gained the summit of one tree, their ingenuity is such that they have no occasion to renew the toil of climbing, for, by means of the branches and some ropes fastened at different places, they pass from tree to tree with the greatest ease and facility. In this manner they collect the toddy from a whole plantation without even once descending; and their feats of agility, on these occasions, are seldom outdone by the most expert sailors in the rigging of a ship, or the gambols of the monkey in its native forests. It is not unworthy of observation, that the usual duration of the cocoa tree is from sixty to seventy years, and that, about the fifth year, it is capable of producing fruit, as if its existence had been measured by providence

to answer the limited life of man. Its height is from sixty to ninety feet, and from one to two feet in thickness. At the top, are about twelve or fifteen leaves, each twelve or fourteen feet long, resembling an immense ostrich feather. The terminal leaf bud is occasionally eaten, when boiled; it is a substitute for cabbage, and is frequently preserved as a pickle : on the removal of these terminal buds, the tree dies. The leaves are employed for thatching houses, constructing fences, ceiling rooms, and making baskets, some of which are so closely worked as to serve for water-buckets, while others are employed for catching fish ; the ligneous fibres are used as pins, toothpicks, brooms, and several culinary purposes. The young leaves being translucent, lanterns are made of them, bonnets for females, hats for soldiers and sailors to protect them from the rays of the sun. The leaves are likewise used to write on, in the same manner as the papyrus of Egypt. Elephants are fed on them, and temporary huts constructed through their means, as they resist all kinds of weather. Travelling at night being customary, in order to avoid the intolerable heat of the day, torches are made of these leaves, and, when burned, the ashes serve all the purposes of soap. The cordage that is formed from the fibres is equal to that from the best hemp. The root is sometimes chewed instead of the areca nut; the hard bark of the stem is converted into drums, and the mid rib of the leaf serves for lancets and for oars. The daily produce of sweet juice drawn from a tree is about three or four gallons, and it continues to flow for four or five weeks together. To prepare the bud for the run of the juice, they check its expansion by laying on it a mixture of pepper, lemons, garlic, and salt ; this they cover with leaves to preserve it from the sun's influence, and, after treating it in this manner, a thin piece is daily cut from its vertex, by which means the juice trickles copiously in proportion to the healthy state of the tree and the congeniality of the atmosphere.

The indigenous growth of the palm seems to be circumscribed by parallels of latitude, twenty five degrees equidistant from the equator ; hence this zone excludes all Europe, and many portions of Asia, Africa, and America. But while providence has bestowed this invaluable production on the inhabitants within those boundaries, it has compensated other countries lying beyond them with the luxury of the vine, so nicely balanced are the gifts of our impartial and munificent Creator.

Though arrack, among the Cingalese, has, from time immemorial, been a common drink of the country, yet their method of manufacturing it is rude, and indicates an ignorance of chemical knowledge.

The still employed for this purpose is of earthenware and of the simplest construction: the subjoined is a true representation of the one in general use.



A. b. is the alembic and capital luted together. D. e. a refrigeratory and receiver of one piece, and the latter connected with the head by a bamboo, c.

The British settled at Columbo, as well as in other parts of the island, have introduced the modern European improvements in this branch of business, but the natives, tenacious of their old arts, seem insensible of such advantages and continue to use their own rude apparatus. In this, however, they are not more singular than in the exercise of other arts, which continue to be practised by them as they have existed from the most remote antiquity. They cannot even be prevailed on to give up some of the most absurd customs. They drink water out of a vessel having a tube like a tea-pot, and receive the contents in their mouths without suffering the pipe to touch their lips. In sharing with a stranger, rather than suffer him to touch the sacred tube, they pour the liquor into his hands. Other habits, equally superstitious, prevail, and a slavish reliance on old customs renders the progress of knowledge slow and difficult. Their weakness is such, that they become dupes of jugglers, pretending soothsayers, and conjurers. In crossing rivers, they endeavour to avert the dangers apprehended from crocodiles, by charms which they call *pilisuniam*, but neither these, nor their numerous magical spells, prevent them from being frequently devoured by those ravenous monsters. Percival informs us, that the conjurers employed at the bay of Condatchy to charm or keep away the sharks from divers in the pearl fishery, are enjoined neither to eat nor drink during the day, lest

their incantations or prayers might prove ineffectual; but it frequently occurs that they regale themselves with plenty of toddy or arrack till they are no longer able to stand at their devotions, and the divers often fall victims to the intemperance of those enthusiasts and their own silly credulity.

At marriage feasts in Ceylon, there is much revelry, such as dancing, singing, music, playing at various games, besides drinking *surie* (fresh fermented palm juice,) punch, arrack, and vellipatty.* These feasts are held at the bride's house, where the happy couple eat out of the same dish, have their thumbs tied together, sleep there that night, and repair the next morning to the bridegroom's habitation.

In the island of Madagascar, where nature has been profusely munificent of her gifts, the natives are for the most part temperate and abstemious. Their ordinary drink is hot water or the broth of boiled meat, except on occasions of ceremony and festivity, when wines of their own making are used. Among these wines, great quantities of *toak*, a liquor made from honey, are consumed at a feast on the circumcision of their children, when those who drink most are considered to have done the greatest honor to the repast. To guard against accidents, the men are deprived of their arms before they are permitted to drink, after which they are suffered to indulge in riot and noise until the whole of the liquor made for the occasion is exhausted. Four sorts of wine are made in Madagascar; the most common is the toak, manufactured much in the same way as our mead. In the composition, three parts of water are added to one of honey in the combs, and the mixture reduced by boiling to one-third of the quantity: it is then skimmed and put to ferment in large tubs or pots of black earth, after which it has a pleasant, luscious taste. Honey is one of the most profitable as well as the most useful articles produced in Madagascar. In the management of bees, there is little trouble. They are very numerous, and readily come to their *tohokes*, or hives; hence is derived the name of *toak*. These hives are trunks of a tree called *fontuoletch*, cut about a yard long, split, scooped, and again bound together in their natural position, leaving a hole at the bottom to enter. These hives are placed in the woods to enable the bees the more readily to collect the honey from the shrubs and flowers.

From a tree, called *Sater*, which resembles the cocoa-nut, but not so large, a pleasant liquor, termed *Araffer*, is produced. The leaves or branches are first burned off, leaving the trunk bare. The top being cut away, a hole is formed in the middle by lancets, which, in a short time, fills with the juice issuing as if from a spring. The liquor being

* Haafner's Travels through Ceylon.

drawn off, the hole fills again the same day, and thus continues to yield a supply for six or seven days before the tree is exhausted. This liquid is not like a sirup, but is very sweet, cooling, and refreshing.* If fermented, it intoxicates like other liquors drawn from the palm tree.

From the cane another wine is procured, termed *toupare*, signifying wine from sugar. This is obtained by boiling the canes in water till they are reduced to two-thirds of the original quantity, after which the liquid is put into calabashes, and, in three days, it becomes so strong and corrosive as to dissolve or penetrate an egg-shell in the course of eight or ten hours. The *toupare* has a pungent, bitterish taste, much resembling beer highly hopped. In this island are fourteen species of the cane much larger and producing more sugar than those of the West Indies; they are used merely for making *toupare*, the natives not knowing the value of them for any other profitable purpose: they are as thick as a man's wrist, and a foot of them in length will weigh two pounds. The third description of wine is derived from the banana fruit *(musà-paradisiaca,)* by boiling it four or five hours, and, after a short fermentation, it becomes in taste and flavour very like cider. From the *vontaca (cydonium Bengalense,)* a fruit, the size of a quince, a fourth sort of wine, not unlike beer, is manufactured. When the vontaca, or Bengal quince, as it is called, is ripe, the juice and pulp have the most delightful flavour, and, when opened, diffuse a most agreeable odour. This fruit is highly nutritive, and is therefore much used in fattening swine.

With their drinks the Madagasses mix the red fruit of the *aughive* in the same way, and for the same purpose, that we use lemon and limes, to impart a palatable tartness. Vines, bearing grapes of a good quality, grow spontaneously in some parts of the island; but previous to the settlement of the French, under Flacourt, in 1655, they were not considered by the natives as eatable. Here also is a curious sort of vine which bears a fruit very much admired by Europeans, and having a root said to be a species of yam; it is called the Madagascar grape, but, whether the root is used for food or to what purpose it is converted, we are not told. In most of the villages of Madagascar, it is a prevailing custom to keep an open house for the entertainment and accommodation of travellers, and, as indicative of its use, it is open on all sides, as if to invite persons from every quarter, and to afford shelter indiscriminately to every individual Although hospitable in the extreme, the Abbé Rochon assures us, that in all their

* Drury's Fifteen Years' Captivity in the Island of Madagascar, 8vo.

entertainments they never fall into those excesses, which are but too common amongst more polished nations: yet, like other mortals, they are subject to occasional aberations from rectitude of conduct and sobriety. In the account given of the loss of the Winterten, East Indiaman, on the coast of Madagascar, the benevolence and kindness of the king towards the sufferers are spoken of in high terms; but it is said, that although he had one fault in common with many of his subjects, that of being addicted to spirituous liquors, he never seemed to forget his dignity. Like the Macedonian monarch, he gave frequent occasion to appeal from Philip drunk to Philip sober; and though the idea was not clothed in the garb of classic taste, it was perfectly intelligible, when he used to say "To day, brandy speak, to morrow, king speak!"

Botanists have enumerated eleven kinds of rice in this island, all cultivated to considerable extent, besides the several species of yams *(ignanames)*, some of which are as large as a man's body. Fruit is abundant and of various descriptions. Water melons are of two kinds, one black, and the other with red seeds: both cooling and much used in the hot seasons. The gourds are of two sorts, one long, the other globular; the former dressed with milk, affords a good nutritive dish, and, after being scooped, the rinds are converted into bottles for wine and other liquors. Though they have other vessels, the king drinks out of an earthen cup which none is permitted to use but himself, not even his wives or children. *Toake* is most commonly drunk out of bowls, and on occasions of rejoicing, the women as well as the men indulge in the sympathetic pleasures of quaffing this favourite beverage.

The inhabitants of Madagascar, when first visited by Europeans, had no notion of letters, of a horse, nor of any kind of wheel machine or carriage; and to the Mahometans, who first traded with them, they are said to be indebted for most of their arts; yet that of distillation seems to have been wholly unknown.—To this day, they may be said to be in a state of barbarism, and, overwhelmed by superstitious notions, they yield to the most absurd practices. Infants are sacrificed because they are brought forth on unlucky days, fathers and mothers even assisting in the destruction of their innocent offspring.

The island of Bourbon, when discovered in the sixteenth century, presented nothing in the vegetable kingdom of any importance for food, the palm tree excepted; but, since that time, it has been planted with various European productions, as well as those of the neighbouring islands. The narrow valleys, the sides of the hills, and the plains, the island being chiefly mountainous, are the only parts cultivated,

and although these amply compensate the labour of the tiller, the produce is principally taken up in cotton and coffee. Partial attention is paid to the sugar-cane, rice, maize, and potatoes, but more particularly to the culture of yams, *cassava (jatropha,)* as they form the chief support of the slaves. From the cassava, is manufactured a drink common amongst the lower order, the same as that in the West Indies, and, as the cocoa-nut is abundant, arrack is also made: the houses, in which this liquor is sold, yield a considerable item of revenue. The crops of rice, wheat, and maize, produce sufficient surplus for exportation to the Mauritius, while oranges, plantains, pomegranates, bananas, melons, raspberries, citrons, tamarinds, and a variety of other fruits, may be had almost for nothing.

The Mauritius, or Isle of France, famed as the scene of the interesting tale of Paul and Virginia, is little distinguished from Bourbon in its productions. The great commodity in consumption amongst the slaves is the *jatropha* or *cassada*, of which there are two species, the *jatropha janipha*, and the *jatropha manihot*, both indigenous to South America and first brought to this island by M. de la Bourdonnois, one of its early governors. The cassada is a strong vegetable poison before it undergoes the process of boiling; the manihot is a kind of narcotic; both sorts are easily converted into wholesome food by a process described in treating of the West Indies and the Brazils. The Mauritians form it into cakes resembling oaten or barley bread, and in this state it is called *manioc*. By a different management, the manihot is turned into a pulpy consistence, known by the name of *tapioca*, and some believe that the farinaceous powder, *Indian arrow-root*, is but a more delicate preparation of this substance. Tapioca, while it thus serves for food, is also a pleasing anodyne. In the Mauritius, sugar is reared nearly equal in quality to that of any other country: a considerable quantity of it is consumed in the island, some of which is refined, but a great deal is used in its crystallized state, and prepared by many, particularly for tea. The planters distil a considerable portion, as the consumption of spirituous liquors is carried to some extent, and the blacks, who are passionately fond of tippling, injure themselves by too free an indulgence in this and other beverages of their own making; hence the cause of the early decrepitude so common amongst them.

Of the minor islands lying in this direction, there is nothing remarkable, except the *coco de mer*, an indigenous production of Praslin, one of the Sechelles adjacent to Mahee. This fruit, found in no other part of the habitable globe, was first discovered on the shores of India, whither it had been carried by the gales and currents from

Praslin; hence, its name, the *coco of the sea*. Prior describes it to be a large species of the cocoa nut, commonly double, frequently triple, quadruple, and sometimes quintuple, enclosed within one common rind and fibrous coat; each of the nuts is about the size of a large melon, distinct in itself, though united on the outside to the others; the whole is of an oval shape, resembling three or four large eggs, united in a circle and slightly flattened at the point of contact. The Indians valued it highly, from supposing it to stimulate the worship of the Paphian goddess; and while some considered one side of the nut an active poison, the other bore equal reputation as an antidote. The *coco de mer* is not only an object of curiosity, but an article of the utmost utility to all classes of the people. Yet Boteler says, although the fruit is so valuable, it is unbearable on account of its strong, offensive smell, resembling that of urine, and increasing the longer it is kept. The timber, which is sufficiently firm, except in the heart of the tree, may be used for many domestic purposes. At the summit of the tree, which is from 60 to 89 feet high, is the cabbage, which, though more bitter than that of the common palm, forms an excellent pickle. One hundred of its leaves make a good house, including roof, sides, partitions, doors, and window shutters; and of such materials the majority of the houses in Praslin are constructed. The down of the leaves is used in mattresses and pillows; the stalks are formed into baskets and brooms, and the heart of the younger stems cut into narrow lengths, from which hats for both sexes are made, and scarcely any others are worn in the island. The fibrous covering of the nut is coverted into ropes, and the shell is universally employed as a pitcher, and commonly holds six or eight pints: it is divided longitudinally, and makes plates and dishes for the Negroes; and when small, forms drinking cups. Within the island, this homely furniture takes the name of the "Praslin crockery ware." No part of this tree is lost, and, without it, the inhabitants, simple as they are, would, perhaps, be ill supplied with many domestic comforts. Besides, the drink which this tree affords, other beverages are made from fruits, particularly from citrons; while rum and arrack are procured from the different vessels trading to those parts.

When Marco Polo visited Sumatra, he observed, that there was excellent wine, both red and white, made from the palm tree, and considered good for consumption, dropsy, and disorders of the spleen. The cocoa nuts that he saw were as large as a man's head, and full of a pleasant liquor, in his opinion, better than wine. In 1599, Davis found *aqua-vitæ*, arrack, and brandy, quite common; and he describes one of the kings as having a number of attendants to

supply him with those beverages, in which he indulged to excess, in company with his women, banqueting from morning till night. Mechanics and tradesmen, of various descriptions, were then numerous, among whom he particularly mentions distillers of *aquavitæ* (arrack) from rice; as being Mahometans, drink from the grape was prohibited.* A rude species of distillation was known to the Sumatrans from a more remote period, and is supposed to be of their own invention. It was practised only in the preparation of the oil of Benjamin, with which they perfumed their hair. The still consisted of a *preeoo*, or earthen rice-pot, covered closely; in the side, was inserted a small bamboo, well luted with clay and ashes, through which the oil dropped into a receiver. What was brought over in this way was empyreumatic; and valued by them at so high a price, that it could only be procured by the affluent. This mode of distillation still continues in some parts of Sumatra,†

The inhabitants import immense quantities of sugar and arrack from Java; but as this island produces sugar-canes in abundance, and is stocked with great plenty of the *anou*, an excellent species of palm, together with rice and other grain, it was expected, in Marsden's time, to rival Java in the manufacture of those articles of trade. The expense of employing slaves in the labours of the field was found at one time to exceed the advantages; but it was seen while the management of the plantations and works were under the care of an English gentleman of the name of Botham, that the end was to be obtained, by employing the resident Chinese, and allowing them a proportion of the produce. From the juice of the *anou*, called *neero*, or toddy, a description of drink is made, termed *brum*, which, from the process, similarity of taste, and name, with the *brom* of Java, seems to indicate a common origin. The late discovery of coal mines in this island, may lead to improvements in all the arts of civilized life, and tend much to give an *impetus* to the physical as well as the intellectual energies of the people; while it may lead adventurers and capitalists to take advantage of the immense resources of the country; and when coupled with steam navigation, it opens a prospect of incalculable benefit to our connexions and settlements in the East.

Ardent spirits are manufactured in larger quantities in Java than in any other island in the Indian ocean; this may be accounted for by the great industry of the Dutch, and the celebrity which the arrack of Batavia so early acquired under their auspices. According to Sir

* Voyage of Captain Davis, in 1598.

† Marsden's History of Sumatra, 4to. p. 146.

Thomas Raffles, the manner of making it is as follows:—About 70lbs. of *ketan*, or glutinous rice, are filled up in a small vat; round this heap, a hundred cans of water are poured, and on the top, twenty cans of molasses; after remaining two days in this vat, the ingredients are removed to a larger vat adjoining, when they receive the addition of four hundred cans of water and a hundred cans of molasses. Thus far the process is carried on in the open air. In a separate vat within doors, forty cans of palm wine, or toddy, are immediately mixed with nine hundred cans of water and one hundred and fifty cans of molasses, both preparations being allowed to remain in this state for two days. The first of these preparations is carried to a still larger vat within doors; and the latter, being contained in a vat placed above, is poured upon it through a hole bored for the purpose near the bottom. In this state, the entire preparation is allowed to ferment for two days, when it is poured into small earthen jars, containing about twenty cans each, in which it remains for the further period of two days, and is then distilled. The proof of a sufficient fermentation is obtained by placing a lighted candle or taper about six inches above the surface of the liquor in the fermenting vat; if the process be properly advanced, the fixed air rises and extinguishes the light. Another mode of apportioning the materials for the making of arrack is,

62 parts molasses,
3 do. toddy (or palm wine).
35 do. rice.

One hundred parts of these yield, on distillation, twenty-three and a-half parts of proof arrack. The stills are made of copper, and are much like those used in the West Indies; the worms consist of about nine turns of Banca tin. The spirit runs into a vessel under ground, from whence it is poured into receiving vessels, and is called the third, or common sort of arrack, which by a second distillation in a smaller still, with the addition of some water, becomes the second sort; and by a third operation is what is called the first sort. To ascertain the strength of the spirit, a small quantity of it is burned in a saucer, and the residuum measured; the difference between the original quantity and the residuum gives the measure of the alcohol lost. The completion of the first sort does not require more than ten days, six hours being sufficient for the original preparation to pass through the first still. The Chinese residents who conduct the whole of this process, call the third, or common sort, *sichew*, the second, *tanpo*, and the first, *kiji*. The two latter are distinguished as arrack *api*. When cooled, it is poured into large vats in the store-houses, where it remains until put into casks. The making of arrack is distinct from that of sugar,

which is manufactured to a considerable extent in Java. The arrack distillers purchase the molasses from the sugar manufacturers at the rate of about a dollar and a-half a picul, delivered at the distillery. The best arrack is made for seven Spanish dollars the picul; or $2\frac{75}{100}$ dollars the cubic foot.* In 1795, the receipts on arrack at home and in India, exclusively of the trade to China, being 140 leagers, amounted to 46,000 florins. The export duty on arrack from Batavia rates as follows:—on the leager (of 388 jugs) of first quality, at 10f; on the second, at 8f; and on the third, or lowest quality, at 6 florins; rice and maize are the chief articles of home consumption, and therefore cultivated to very great extent: some wheat is likewise raised, but the staple article is rice. Two kinds of fermented liquor is prepared from the latter grain by the natives. In making the first, called *badek*, the rice is first boiled and stewed with a ferment called *razi*, consisting of onions, black pepper, and capsicum, mixed up into small cakes, and daily sold in the markets. After frequent stirring, the compound is rolled into balls, which are piled upon each other in a high earthen vessel; and when fermentation has commenced, the *bádek* exudes and is collected at the bottom. The remainder, after fermentation is completed, has a sweet taste, and is sold as a dainty in the markets under the name of *tápè*. *Brom* is the second kind of liquor, and it is made from *ketan*. This glutinous substance is boiled in large quantities, and, being stirred with *razi*, remains exposed in open tubs, till fermentation takes place, when the liquor is poured off into close earthen vessels. It is generally buried for several months in the earth, by which means the fermentation is checked, and the strength of the liquor increased—it is sometimes made strong by boiling. The colour varies from brown to red and yellow, according to the *ketan* employed. Brom, kept for several years, is considered excellent by the natives, and is very intoxicating. It is, however, ardent and apt to give a head-ache.† The white arrack, called *kneip*, is generally boiled strong, and sent to India; the brown arrack receives that tinge from the cask, and it is that description of this liquor which is sold in Europe. The casks are made from the teak tree, which imparts to the liquor a particular flavour, much relished, and which is supposed to arise from an essential oil peculiar to this wood. The Chinese drink the weaker sort warm, as is the practice in their own country.‡ The Batavia

* Crawfurd's Hist. of the Indian Archipelago, vol. i. p. 478.

† Raffles' Hist. of Java, vol. i. pp. 176, 177.

‡ Thunberg's Travels, vol. ii. p. 283.

arrack is celebrated all over the East for its superiority; and when mellowed by time, is certainly an excellent spirit. The Chinese, to do them justice, have arrived at a degree of perfection in its manufacture not equalled by any other people. Here the palm is of the greatest importance, as it yields sugar and toddy so indispensable to those distillers. Of this tree, there are many varieties in the island; that termed *Sagwire*, or *Gomuti palm* (*Borassus Gomutus*) affords to the inhabitants abundance of fruit, about the size of a medlar and of a triangular form: the fruit of a single shoot yields a sufficient load for a man. From the inside of the fruit, a good sweet-meat is prepared, while the outside rind is of a poisonous quality, and when macerated, the infusion is, from its peculiar pungency, termed by the Dutch "*hell water.*" The native Javanese turn the material of this tree to various useful and domestic purposes; so that not a particle of it may be said to be thrown away.

The enterprise and energy displayed in the working of the coal mines in the district of Bantam, cannot fail of adding much to the facilities of trade and manufactures in Java, and ultimately serve to enhance its commercial interests. Wood is the chief fuel; but its price and bulk are, from many considerations, a considerable drawback to its general usefulness.

At Batavia, the Dutch make a kind of beer of a very effervescent nature, called *klein bier*, which they usually drink in the evenings. This beverage not being hopped, merely serves for present use, and has good medicinal effects; when the calabash, or vessel in which it is contained, is opened, a very loud report is heard, and in the glass it sparkles like champagne. Were more care taken in the brewing of this liquor, it might supersede, in a great degree, the importation of a foreign article, and prove more wholesome than many of the native drinks.

Although sugar is extensively manufactured in Java by the Chinese, no rum is made: in refining sugar, the process followed is much like that observed in the West Indies. The quality is considered equal to that made at Manilla, or the Antilles, though the machinery is rude. Considerable quantities are sent to the Malabar coast; but the principal exportation is to Japan and Europe. The sugar produced in Java amounted, in the year 1818, to 200,000 piculs, or 27,200,000lbs.

Here, as well as in other of the East India islands, where European influence has made an inroad, the revenue is collected by farming it either to the natives, or to Chinese speculators, who are usually the chief contractors and manufacturers. The better to secure it, the farms are put up to public auction, which is often the cause of

fraudulent and exorbitant exactions. A leager of arrack, of the highest proof, including duties, sells at the merchants' stores at from 60 to 75 dollars; or 45 cents of a Spanish dollar per gallon; and a leager of the second quality at from 45 to 55 dollars, or 33 cents per gallon. Sometimes the best sort may be had for 20 pence; and the ordinary kind for about 15 pence a-gallon.

At a remote period, the proprietors of inns and taverns were obliged to pay two rials per month for their license; besides, 70 rials excise on every pipe of Spanish wine which they sold; while the distillers of arrack paid 50 rials for every chaldron, or gosper, which they manufactured.

As the great portion of the population of Java, computed at 5,000,000, are Mahometans, an indulgence in intoxicating liquors is not prevalent, though the people often barter their credit and character in private for the produce of the still. Crawfurd says, that notwithstanding the professors of the Mahometan faith, in this island are no drunkards, all classes partake of wine, or spirituous liquors, without reserve. Among the native chiefs of highest rank, he found but three examples of persons refraining from the open use of these beverages.*

Many of them, during their convivial moments, when excited by bacchanalian frenzy, often commit the most extravagant acts. On one of these occasions, the son of a chief, professed with a belief of his own invulnerability, put the matter to the test, by drawing his kriss and killing himself on the spot.

To the widows, who immolate themselves on the funeral piles of their husbands, it is customary to give, the night before the ceremony, whatever tends to the gratification of the senses; and among these, wines and spirits form no inconsiderable share. They are given in such quantities that few objects appear terrific: hence the horrors of the burning sacrifice are met in a state of excitement or stupefaction, which deprives death of all its terrors.

At feasts and entertainments, there is much conviviality, with great indulgence in the pleasures of the table. The cups used by the princes, chiefs, and most of the higher orders, are costly and splendid, being studded with precious stones and otherwise highly ornamented.

Batavia, the capital, from being situated in a low, swampy ground, intersected with fœtid canals, and surrounded by stagnant marshes, is so unhealthy, that few Europeans, who can avoid it, even sleep in the city. Soldiers and seamen have often neglected this precaution; hence a night or two spent there has proved fatal. Much of this is

* Hist. of the Indian Archipelago, vol. ii. p. 270.

to be attributed to excess in eating, but a great deal more to excess in drinking arrack; a liquor so cheap that a man may get drunk for a half-penny. Hence, it has been observed, that a person found drunk at Batavia is a fit subject for a doctor's care; and this remark, which is there prevalent—or, rather a common adage, has often had the good effect of preventing repetitions of inebriety; as a regimen suited to the nature of the indiscretion, added to a fear of death, carries with it a cure for the most determined drunkard. Such is the mortality which sometimes prevails among new-comers and settlers, that when a lady, who kept lodgings, was applied to for accommodations, she regretted her inability to comply, but exclaimed, with flippant earnestness, "Do not be impatient; my lodgers are foreigners or strangers, and you know we are certain of death-vacancies in a short time!" As a provision for contingencies, in consequence of the mortality that prevails, it is common to have graves ready made for the first that may offer, as it too unhappily occurs, that the influx of strangers is a constant source of support for the speculation of the undertakers. It has been remarked, that Europeans are here the principal sufferers; next the Creoles, and half castes; then the Chinese, Javanese, Malays, Baliers, Buggese, Amboynese, Negroes, &c.

The next island that claims attention is Borneo, a place, which from its being, with the exception of New Holland, the largest island in the world, ought to afford ample materials for an extended article; but, like many other portions of the globe, it is yet little known. The coasts are possessed by the Malays and other settlers, while the aborigines occupy the inland parts, and are styled *Beajus*, a term, which, in the Malay language, signifies a *wild man*. Some accounts say, they are little better than men in a wild state, and if Commodore Roggewein relate facts, we ought to consider them among the basest, most cruel, and perfidious people in the world.* Perhaps the most authentic account of this island is that given by Antonio Ventimiglia, an Italian missionary, sent from Macao, in order to convert the natives to Christianity—he died there in 1691. His account is more favourable to their moral habits, as he represents them, particularly the Beajus, as honest and industrious, having a strong affection for each other; sowing and reaping for mutual benefit; each taking what serves his family, and leaving the remainder to the tribes in common. By this means, both scarcity and disputes are prevented, and general harmony prevails.

The Chinese early traded to this island, and many of them becoming settlers, instructed the natives in those arts with which

* Voyage round the World by Roggewein, in 1721–1723.

they were themselves familiar. Magellan found arrack in abundant use among them, and Captain Beckman* was regaled with the beverages peculiar to other equinoctial regions. As Borneo furnishes most of the trees and fruits common to the East, hence the same description of liquors are prevalent—toddy and arrack from the palm; sugar and rice; with cooling draughts from melons, oranges, citrons, bananas, pomegranates; a variety of other fruits and honey. Their Pagan practices have many offerings and ceremonies connected with the worship of their idols, which, with their feasts and superstitious observances, give occasion to the consumption of a vast quantity of their intoxicating beverages. Besides the native supply, a large proportion is imported from Java, for which gold and diamonds, so abundant in the island, are bartered. The *ava*, or intoxicating pepper plant *(piper methysticum)*, is much cultivated by the Beajus, and affords them equal pleasure with the betel and areca, of which they chew immense quantities. The *ava* is a shrub with thick roots, forked branches, long leaves, and bearing a clump or spike of berries. The root being chewed, a little water or milk from the cocoa-nut is poured upon the masticated pulp, and from the fermentation which ensues, a strong inebriating drink is produced, in which the natives delight, and indulge often to excess. Their physicians, as among other rude nations, have recourse in the cure of diseases, to charms and necromancy; and most of their incantations and mummeries are the effects of intoxication. The *piedro di porco*, or pork stone, which is so highly esteemed among them, that it some times brings 300 crowns, is exhibited with the liquor in which it is steeped before the draught is administered, in order that the doctor may infallibly ascertain whether his patient is to live or die.

Throughout the whole of the Sunda islands, a vast number of the Chinese are scattered; and their affairs are managed for the most part agreeably to their own national observances. Those in the island of Timor have a code of laws by which they are governed; and amongst other regulations, they have secured to themselves an exclusive right to manufacture a spirituous liquor called *anis*, a description of arrack highly esteemed. The natives extract from the fan-palm, a beverage termed *bacanassi;* this is fermented in baskets made of the leaves of the *pandanus*, and suspended from the branches of the tree for a few days till it becomes fit for use.

In examining the group of islands classed under the name of Celebes, or Macassar, I find that naturalists are very little

* Capt. Beckman's Voyage to Borneo, 1718, 8vo.

acquainted with the interior of any of them; they seem, however, to differ scarcely any thing in their productions from those already described. Most of the oriental grains and fruits abound, and rice is reared in such quantities, as even to afford much for exportation: cocoas, sugar, betel, areca, and different kinds of palms are plentiful. The plantain is of the very best description, and the natives in a great measure exist on the fruit and regale themselves with its inebriating juice. From the *Sagwire*, (Gomuti palm) a very strong species of wine is made, which, in Macassar, goes by the name of the tree from whence it is drawn. The religion in those islands, being chiefly Mahometan, has hitherto prevented the inhabitants from carrying on distillation to any extent, although they are supplied with every article necessary for the purpose. The arrack and foreign liquors consumed here are principally brought from Batavia; but, since many of the natives have become Christians, it is not likely that they will continue so scrupulous as the followers of the prophet. The introduction of the Mahometan faith is somewhat singular—one of their kings having heard of various modes of worship, particularly the Christian and Mahometan, became dissatisfied with his own religion. He convened a general assembly, and, ascending an eminence, with fervour addressed the deity, entreating him, as he had the winds and waves in his own hand, to send first to those islands those missionaries who taught the true religion, declaring, that he would reckon such an arrival a declaration of heaven in their favour; and disclaiming all blame, if he were thus misled. The Mahometans first arrived, and their religion was instantly embraced, as that for which heaven had openly declared.

The next islands that arrest attention are the Molucca or Spice islands, with which, although there is constant communication, our acquaintance is but slender. With their valuable products, which have added so much to the refinements of luxury, all are familiar; but the manners, habits, and domestic economy of the inhabitants, are yet but imperfectly known to us. Fruit is rather scarce, and grain is but partially cultivated, the whole attention of the people being directed to the rearing of spices. In Ternat, which is the largest of the groupe, a meal is extracted from the pith of a species of palm, thought to be a description of sago. From a luscious root of this name, which is sold in bunches, a kind of bread is made, held in high estimation. Canes, yielding a liquor between the joints, afford a cooling drink, while the defect of native beverages is supplied by foreign importations. In the Moluccas, some sugar-canes are grown, but they are of little importance; the bread-fruit abounds, and a kind of honey is

obtained from a fly (a species of bee), scarcely the size of an ant. The rapacity of the Dutch and their fear of invasion have induced them to discourage the cultivation of the various esculent commodities which the nature of the climate and the richness of the soil would warrant.

Amboyna is noted for an excellent description of *Sagwire;* the tree from which it is extracted, is of the same genus as the cocoa-nut, sago, siri, and date-tree; from sago and siri, it appears to derive its name, as if the liquor were indiscriminately made from each. To keep this beverage for any length of time, the roots of a tree called the *Sasoot*, or *Oubat*, are infused, which occasion fermentation, and the process is usually completed in eight hours. It is generally bottled for convenience and safety, and is considered wholesome, refreshing, and strongly inebriating. The juice or toddy is collected in the same manner as elsewhere described, and is here called *tyffering.** From the Sagwire, an arrack is distilled, and sold so cheap as a farthing a glass. When Arago touched at the island of Rawack, one of the Moluccas, he observed, that both before and after a repast, a libation was made, in honour, as he supposed, of some deity—the milk of the cocoa-nut appeared to be the principal beverage.†

In the Manillas or Phillippine islands, the sugar-cane is successfully cultivated; the valleys are fertile in Sago and many kinds of fruits, and the bread-fruit has lately become an article of importance. The aborigines are called Negrellos, and, it may be presumed, they are much attached to inebriety, as they make drinking vessels of the skulls of such unfortunate Spaniards as fall into their hands, owing to the gross treatment they received from the first invaders.

At Manilla, the largest of these islands, palm trees grow in great perfection, and there is not less than forty species: such is the magnitude of some of them, that a Jesuit missionary having touched there, had, through the kindness of a friend, a place prepared for him so capacious, that under two leaves of one of those trees, he was enabled to say mass and to sleep securely from the most violent rain. The palm to which these leaves belong, is somewhat similar to the talipot of Ceylon (*licuala spinosa)*—the leaves lie in folds like a fan, and are so large, when expanded, that they measure five feet every way. Here they are used as umbrellas, and are sufficient to protect five or six persons from the heaviest rain. This tree rises to a great height, and never blossoms but once, and that is said to be in the year in

* Stavorinus's Voyage to the East Indies, vol, ii. p. 349.

† Arago's Voyage, 4to. p. 234.

which it dies, when some beautiful yellow flowers appear at the top, ornamenting the wide-spreading branches, and these are surrounded by a fruit as large as a cherry, of which no use is made, except that of preserving it for seed. Thunberg, speaking of the talipot, says, that when the sheath, which envelopes the flower on its lofty summit, comes to maturity, it bursts with an explosion like the report of a cannon, and after that it shoots forth branches on every side to the surprising height of thirty or forty feet. When cut down for the sake of its seed, the pith, like the sago-tree, yields a sort of meal which is made into cakes, and tastes like fine bread, forming a good substitute for rice. Davy, in his account of Ceylon, questions the reality of what is related respecting the talipot, and says that a good deal of it is fabulous, but that the leaves are from twenty to thirty feet in circumference. Here, as well as in Mindora, another of these islands, a liquor called *tuba* is drawn from a palm much like the cocoa: large quantities of it are consumed in the country, and produce a considerable revenue. This beverage obtains the name of *tuba*, in consequence of the liquor being infused with *calinga*, the bark of a tree like cinnamon, which is put into it, in order to give it a colour and a more pungent taste. Large quantities of cocoa-nut wine are consumed in that country, producing a considerable revenue. The rich distil this juice either once or twice, as they wish it stronger or weaker; it is a clear spirit of an astringent quality.

The liquor called *Chilang* is a simple beverage, made by first boiling the juice of the sugar-cane, and then allowing it to ferment, after which it assumes the colour of wine. Another drink, termed *Pangati*, is made by first putting some herbs with leaven into a pot, then covering them with rice till the vessel is half full and afterwards pouring water on the entire mass. When fermentation has subsided, water is again added, and the liquor thus diluted is usually consumed by sucking it through a cane tube. A substance, not unlike marmalade, is made from toddy, enclosed in sections of the cocoa-nut shell, and exposed in that state in the public bazaars for sale. Sugar, however, is so abundant, that the manufacture of this article is rendered less necessary. Rice is reared with little labour, and even grows on the tops of the mountains without being watered; it affords the Chinese, who live on and frequent the islands, an opportunity for the exercise of their ingenuity in all the varieties of the brewing process. Abundant materials for the making of an excellent brandy are obtained from the cocoa, *nipe*, and *cabenegro* trees: the *nipe* or *nipah* is chiefly cultivated for its juice; it is a low description of palm, seldom exceeding the height of a man; the fruit affords an excellent

sweet-meat, and the leaves, called *atap* by the Malays, are employed in covering cottages and constructing mats.

As Manilla is the great mart and centre of all the Spanish traders in the East, and the several nations with whom they deal, much of the luxuries and comforts of other countries are brought thither. The viceroy lives in great splendour, and at his table, as well as at the tables of the higher order of merchants, may be found most of the wines, spirits, and liquors of Europe, Asia, Africa, and America. The imports are chiefly brandy, gin, and wine: sugar is exported to the amount of 75,000 piculs annually, which, at 142lbs. the picul, is equal to 10,650,000lbs. The sugar is equally packed in earthen vessels, called *pelons*, three of which contain two piculs; the export duties are 12 cents. the picul. In 1817, the revenue on cocoa-nut-wine, was 153,641 dollars, and on rum 483 dollars.

In Mindanao, another of the Phillippine islands, among the various fruits, plants, and grain which it produces, there is a tree, called *libby* by the natives, yielding a kind of sago, and of which there are groves and plantations several miles in length. It resembles the cabbage-tree, or rather the bread-palm of Malacca, having a strong bark and hard wood, the heart of which is full of a white pith like that of the elder. When the tree is cut down, the pith is extracted and beaten in a mortar until it becomes a complete pulp; in this state it is laid on a cloth, or sieve, water is poured on it and kept stirring until all the farinaceous, or mealy substance, is strained into a receiver. When settled, the water is drained off, and the residuum or sago baked into cakes and used as bread. Considerable quantities of this valuable article are exported to different parts of the East and eaten with milk of almonds, being deemed, from its astringent nature, an excellent remedy in diarrhœa.

The interior and mountainous parts of Mindanao produce honey in such abundance, that bees' wax is an article of export, and the inhabitants are not ignorant of the uses to which the honey may be converted in administering to the comforts of life. The Phillipine islands are also noted for a water drawn from a tree justly termed "*the fountain tree*," and for a kind of cane called by the Spaniards *vaxuco*, each joint of which yields sufficient for an ordinary draught; and it is singular that the *vaxuco* abounds in the mountainous and barren parts, where a cooling beverage is most required.

Leaving the extensive range of islands connected with the two great Indian Peninsulas, the first kingdom on the Asiatic continent that claims notice, is Cochin-China, in which the manufacture of rice-wine and distillation from that grain are carried on to great extent.

Plantations of sugar-cane are very numerous, and sugar of prime quality is made, in the refining of which the inhabitants have arrived to a degree of perfection unknown, perhaps, in any other part of the world.* This is accomplished by intermixing layers of the sugar-cane of one inch in thickness with similar layers of the herbaceous parts of the plantain tree. The aqueous juices which exude from this filter, carry along with them all impurities, and leave the sugar clear and crystallized. In this state, it is light and porous as a honeycomb. The trade in this article is immense, the Chinese alone are said to take 800,000 quintals yearly. It is, however, strange, that the inhabitants do not manufacture rum. Vines are said to grow spontaneously, and grapes are produced in abundance, but they do not appear to be converted into wine. This has been attributed to their ignorance of knowing how to check the fermentation of the juice of the grape or of other vegetables before they pass from the vinous to the acetous state, else it is most likely that wine would have been common with them instead of distilled liquors.

From the periodical rains and consequent inundations, Cochin-China is remarkably fruitful in rice, which is divided into two classes, one growing on a dry soil, the other on a soil that is wet. In all the provinces, there are great granaries filled with it, where it is sometimes kept in good preservation for upwards of thirty years. Of this grain, there are six different sorts; one description is long, farinaceous, and opaque, from which arrack is chiefly made.† This preservation of grain is not uncommon; for we find that in some of the Barbary states, corn is kept in the *matamores*, subterraneous vaults, or holes made in the form of a cone, for thirty years or more. These vaults are closed at the opening, and atmospheric air carefully excluded.‡ In distilling from rice, the Cochin-Chinese are not inferior to any other eastern nation. Their arrack is their chief and favourite drink; and "they have it in such plenty," says Borri,§ "that all people in general drink as much as they will, and become as drunk as people among us with wine. Graver persons," he adds, "mix that liquor with some other water distilled from *calamba*, which gives it a delicious smell, and forms a delicate composition." *Calamba* is a wood of the Kemois mountains; a species of *lignum aloes*. When cut young, it is denominated *Aquila* or *Eagle's-wood*, when old, it is

* The curious reader may find this described at large in Staunton's Embassy, vol. i. p. 258.

† White's Voyage to Cochin-China, 8vo. p. 252.

‡ Jackson's Account of Morocco, p. 102.

§ Borri's Account of Cochin-China, Churchill's Coll. vol. ii. p. 801.

called *Calamba*. This wood is so celebrated for its perfume and virtue, that it belongs only to the king; and it is said of it that, even though buried four feet under ground, it is discovered by its fragrance. Lord Macartney and the gentlemen of his suite were regaled with a portion of this spirit at an entertainment given by the governor of the town of Turon, while the ships were anchored in the bay. It was served in small cups, and resembled, in Staunton's opinion, Irish whiskey. The host on that occasion, by way of setting a good example to his guests, filled his cup to the brim, in a true European style of joviality, and after drinking, turned it up, to shew that he had emptied it to the bottom.* The Cochin-Chinese are a kind-hearted people, and do not bear the character of intemperance. Hospitality is common amongst them, and as practised in the Nicobar islands, a traveller in want of money is always sure to obtain subsistence at any house he may choose to enter, partaking, in common with the family, every thing at table, and retiring without any body inquiring his business,—whence he came, or whither he goeth, it being enough for them to know that he is a fellow-mortal in distress.† Various descriptions of drink are made from the fruits and vegetables with which the country abounds. The areca-nut and betel are in much request, and, before they are used, are formed into a paste with lime and water. For the purpose of carrying this material about them, the inhabitants go to great expense in making pouches and boxes, which both sexes wear indiscriminately. The men carry their's suspended by a riband from the shoulders in the form of a belt, while the women attach their's to a girdle round the waist. To the practice of chewing betel and smoking tobacco may be attributed the chief cause of the great consumption of rice-wines, in order to supply the constant drain on the animal juices.

Betel is a favourite over all the East, and its general use is such that no feast or occasion of ceremony is observed without it; and to partake of it in company with persons of high rank is accounted an honour. It is related of the king of Quedah, that in order to express a high mark of his respect for any of his courtiers or visiters, he made him sit near his throne, and having chewed a little betel, sent it fresh from the royal mouth on a gold saucer to the distinguished individual, who was obliged, as a matter of courtesy, to chew it after him with every apparent mark of satisfaction.

The highest affront one can offer to an Oriental is to refuse his betel. Bernier tells a story of a young nobleman, who, to prove his

* Staunton's Embassy, vol. i. p. 255.

† Le Poirre's Observations on Various Nations, 12mo.

loyalty, took and swallowed the betel from Shah Jehan, though he knew it to be poisoned.

As the kingdoms of Tonquin and Chochin-China were at one period governed by the same laws, there still exists an affinity in the manners, customs, arts, and sciences of the inhabitants. A reciprocity of habit prevails, and we do not find that the Tonquinese are acquainted with the making of any beverage with which their neighbours are not familiar. The fertility of the country and temperate nature of the climate are said to enable them to cultivate a great variety of grain. Besides the rice common to the rest of India, they rear five other kinds peculiar to the soil. The first is the *small rice*, the grain of which is long, thin, and transparent; it is accounted the most delicate, and is generally the only kind which the physicians allow their patients. The second is the *long thick rice*, the form of which is round. The third is the *red rice*, it is so called because its grain is covered with a reddish coloured pellicle. These three kinds of rice require much water, and never grow but on lands that are frequently overflowed. The *dry rice*, which is of two kinds, grows in a dry soil, and has no occasion for any water, but what falls from the heavens. These two last kinds produce a grain as white as snow, and are the principal articles of their trade with China. They are never cultivated but on the hills and mountains, where they are sown in the same manner as our wheat, about the end of December, or beginning of January, at which time the rainy season ends. The dry rice is generally three months in the ground and is very productive.* The wine from these appears to be excellent; and the arrack, of which large quantities are distilled, is much esteemed throughout the East. In Tonquin, there is also an odoriferous kind of rice, which is said to intoxicate by merely eating it without its undergoing any process of fermentation; but as this is contrary to the quality of any other grain, the truth of the statement is questionable—this rice, however, yields by distillation a strong kind of arrack. From the palm, which is abundant, toddy is extracted, but it is reckoned by Barron to be bad for the nerves;† not from any peculiar quality in the juice, as obtained from the tree, but from the mode in which the fermentation is conducted. The sugar-cane abounds, being indigenous to the country. Two kinds are common, the one is large and exceedingly high, with long joints, appearing always green, and is very full of juice; the other is smaller, of a yellow colour, and although it affords less liquor, it furnishes more

* Grosier's China, vol. i. p. 292.

† Barron's Description of the Kingdom of Tonquin.

sugar. Until lately, the Tonquinese were ignorant of the mode of refining it, contenting themselves with bruising the canes, boiling the juice twice, and allowing it to settle into a thick sirup called *honey of sugar :* perhaps it is well for the peace and happiness of the inhabitants that the art of making spirits from molasses or sugar is to them still a secret. Even the vine, the natural production of the climate, is neglected, and the art of making wine from the grapes unknown. Rice-wine, the common liquor, is drunk warm, and much of it is used at religious sacrifices. On those occasions, a strange custom prevails, of trying the animals intended as offerings, by pouring warm wine into their ears : if they shake their heads, they are judged proper to be sacrificed ; but if they make no motion, they are rejected. In the course of the ceremony, the flesh of the victim sacrificed is uncovered, and the priest, raising a vessel filled with spirituous liquor, (arrack), sprinkles it over a human figure made of straw, invoking the spirit of Confucius to be their tutelary guardian and benefactor. After a lengthened orison, the priest regales himself with the remains of the liquor, which he cautiously secures for that purpose. A custom equally ridiculous, as the one of choosing the animals for sacrifice, prevails amongst the people of Laos—that of rubbing the head of an elephant with wine, enriched with a drop or two of human gall, under the impression that the beast will thereby become more robust, and the owner more courageous.

The mountaineers of Tonquin, denominated *Miao-tsè*, have devised a peculiar system of religion and rites, of which their priests are at the head. It is generally in the house of one of those spiritual fathers that their gods are consulted and deliver oracles. On such occasions, a great noise announces, as is supposed, the arrival of their deities. Previous to this, the time is passed in drinking and dancing, but, on this announcement, all diversions cease, and the multitude send forth loud shouts of joy, crying as they address themselves to their principal god, " Father! art thou already come?" A voice answers, " Be of good cheer, my children; eat, drink, and rejoice; it is I who procure you all those advantages which you enjoy!" Having listened to these words with profound silence, they again return to their pleasures and revelry. The gods, becoming thirsty in turn, ask for something to drink, when vases ornamented with flowers and full of liquor are immediately presented, which the crafty priest insidiously carries to the gods, he being the only person permitted to approach or converse with them.

The *Miao-tsè* collect large quantities of honey from the bees, which feed on the wild flowers that everywhere adorn the sides and valleys

of the mountains where they reside; this honey they convert to various purposes, and prepare a beverage from it which is considered very palatable and wholesome. Honey is held in such high estimation among these people, that they believe it forms an essential ingredient in the food with which the souls of their departed relatives are nourished in the paradise of their gods.

The Tonquinese are of a social disposition; but too much form and ceremony are observed in their visits and entertainments to render them agreeable to strangers. Father Horta saw a card of invitation for dinner couched in the following terms: "Chao-ting has prepared a repast of some herbs, cleaned his glasses, and arranged his house, in order that Se-tong may come and recreate him with the charms of his conversation and the eloquence of his learning; he therefore begs that he will not deny him that divine pleasure." When all the persons invited on such occasions are assembled, and before the entertainment begins, the master of the house takes a cup of gold or silver filled with wine, either of the country or the Mandarin of China, and proceeding to the outer court, with his face turned towards the south, pours it out as a peace-offering or libation to the tutelary spirit of his dwelling. This ceremony being over, the guests approach the tables, and before they commence eating, waste an hour in complimenting each other. The person of the greatest distinction in company drinks first, all the rest in succession, and each salutes the master of the house. The cups employed to hold the liquor are very small, being scarcely deeper than the shell of a walnut; these, however, are often replenished, which make amends for their diminutive size. If the guests chance to play at small games, the losing person is condemned to drink freely as a forfeit for his ill luck. Being great lovers of tea, they frequently mix arrack with it and drink to intoxication.

The end of these entertainments is generally suited to the beginning, pompous and formal. The guests praise in detail the excellence of the dishes and the politeness and generosity of their host, who, on his part, makes a number of excuses, and begs pardon, with many low bows, for not having treated them according to their merit.

In this country, the adoption of children is customary, and it is a practice on the occasion, for the person so adopted, when presenting himself before his patron, to give him a hog with two jars of arrack. A similar ceremony is observed in courtships; the lover or his parents offering the father or mother of the lady a jar of arrack, a hog, a box of betel, or some other gift, which is either accepted or rejected according as the young man appears eligible or otherwise. At weddings,

and on all occasions of ceremony, the people indulge freely, though they seldom go to excess, in drinking strong liquors, except persons about the court and the military, of whom it is said "that the greatest drinker is the bravest man."

Here also is a singular mode of settling quarrels : when the parties are obliged to appear before a magistrate, the usual adjudication being that of ordering the offender to treat the injured person with arrack, fowl, and pork, so that, by thus feasting together, they may forget the injury and put a stop to future animosity. Not less remarkable is the annual renewal of allegiance to the Choua, which is performed by cutting the throat of a fowl, and receiving the blood in a basin filled with arrack ; after which, each in his turn drinks a glass of the mixture, repeating aloud his professions of loyalty—this is accounted one of the most solemn and binding obligations, and is frequently had recourse to on various occasions. The arrack and rice wines are sold everywhere throughout Tonquin ; and in the public markets, held every fifth day, they are exposed for sale like any other article of traffic. A very nice description of cider is made from the *miengou*, a fruit resembling the pomegranate, the tree producing it is somewhat like the fig ; its branches are pliant and delicate, the wood soft and porous, its leaves nearly circular and of a pale green colour. In wet weather, a tart milky sugar runs from it, which the peasants collect in small porcelain vessels, it soon hardens, and is said to be very efficacious in curing head-aches, fevers, and dysenteries. Various other beverages are prepared from the different fruits of the country, consisting of pine-apples, oranges, bananas, pomegranates, and a red species of fig, which, in taste and smell, resembles those of Turkey or Provence.*

When going to any distance, they bring with them a supply of these liquors to allay their thirst and recruit their strength. Throughout the whole of Tonquin, during the different festivals, some of which last ten or twelve days, there is a great consumption of arrack and other exhilarating beverages, and, on these occasions, recourse is had to every of kind amusement resulting from intemperance.

In China, a country which has preserved its civil polity for so many thousand years, the art of distillation was known far beyond the date of any of its authentic records. The period of its introduction into that country, in common with the rise and progress of other chemical arts, is, however, concealed amidst the darkness of ages. But taking

* Les Voyages et Missions de P. Alex. de Rhodes, 4to.—Relation Nouvelle et Curieuse du Royaume de Tonquin, et de Laos. Traduite de l'Italien du P. de Marini, 4to.

dates as we find them, sanctioned by respectable authority, and leaving the assumed antiquity of the nation as a point for the discussion of chronologists; I am led to attribute to the people of this empire the merit of an invention which seems to have eluded the grasp of the human intellect in the rest of Asia, Africa, and Europe, until a more advanced period in the history of the world.

There is no doubt whatever, that from the earliest ages the Chinese were acquainted with many of those useful and ingenious preparations which are still considered indispensable in the practice of the arts and manufactures of every civilized country. Their knowledge of gunpowder, before it was discovered in Europe, seems to be a fact undisputed, and appears coeval with that of their most distant historic events. An intelligent Chinese writer states, that it was used by them in fire-works upwards of 2000 years ago; but its application to the purposes of war was of a late introduction. Shut up within the bosom of a country yielding in abundance all the necessaries and even luxuries of life, and satisfied with the articles which it afforded, they felt no desire to seek or encourage an intercourse with foreign nations.* The first missionaries, who visited China, also assure us that the properties of the loadstone were early known to the inhabitants, and the compass used as a guide in their journies through the empire. Marco Polo is said to have brought the invention with him in 1260; and it is even affirmed, that the emperor Chiningus, a famous astrologer, had a knowledge of it, 1120 years before Christ. Their inventions, therefore, appear to be entirely their own; the annals of the empire, in the language of Staunton, bear testimony to the fact, and it is confirmed by the consideration of the natural progress of those inventions and of the state of the Chinese arts at this time.† Established authority in China is decisive of public opinion, and abridges the liberty of private judgment,—error is consecrated by antiquity, and the free excursions of genius are unknown. Further advances, therefore, are not likely to be made until the prejudices of habit and the clouds of ignorance shall have been dispelled by the diffusion of scientific knowledge on sound philosophical principles.

That the Chinese were versed in all the secrets of alchymy; or rather in that branch of it which had for its object a universal *panacea*, long before this fancy engaged the speculations of European practitioners, there is abundant proof,‡ since some of their empirics have,

* Barrow's Travels in China, 4to. p. 276 and 434, &c.

† Embassy to China, vol. ii. p. 160 and 162.

‡ Du Halde, Le Compte, Martini, Osbeck, Grosier, &c., &c.

from an early period, boasted of a specific among their drugs, which ensures an immortality like that conferred on Godwin's St. Leon. The search after this *elixir vitæ* originated, it appears, among the disciples of the philosopher Lao-kiun, who flourished six hundred years before Christ. Not content with the tranquillity of mind which that teacher of wisdom endeavoured to inculcate, and considering death as too great a barrier to its attainment, they betook themselves to chemistry, and after the labour of ages in a vain endeavour to prevent the dissolution of our species, and after the destruction of three of their emperors who fell victims to the immortalizing draught, they, like the alchymists of Europe, ended their researches under the pretence of discoveries which were never made, and of remedies that could only be administered under all the extravagancies of magic. The emperor *Hyen-Tsong*, in the year 820 of the Christian era, procured some of this liquor, with which it is thought his eunuchs mixed poison, as he died immediately after drinking it, at the age of forty-three.* *Swen-Tsong*, it appears, had no sooner taken it in the year 859, than he became a prey to worms and died in a few days.† Shi-Tsong, or Kya-Tsing, also died of the effects of this liquor in 1556. This monarch built a place called *Van Xeutien*, or the palace of ten thousand lives, for the express purpose of distilling these waters of immortality. It was surrounded by a high wall and battlements perfectly round, as were also the halls and chambers, presenting in the interior, hexagons or octagons. The architecture was beautifully magnificent, and very romanticly situated on the great artificial lake within the enclosures of the monarch's residence in Pekin.‡

The emperor *Vu-Ti*, who reigned in the year 177 before Christ, when about to put one of his ministers to death for drinking a cup of this liquor which had been prepared for himself, was convinced of his weakness and folly by the following wise and sensible remonstrance of his minister : " If this drink, Sire, hath made me immortal, how can you put me to death? but if you can, how does such a frivolous theft deserve it ?"§

In any country, where medicine has not been established as a regular study, it can scarcely be expected that the profession of a chemist could be supported with dignity or respectability. But, whether to this search, or to other circumstances, the early knowledge of the Chinese in distillation is to be ascribed, it would be no easy matter to determine. Their acquirements in medicine are so limited,

* Du Halde, Annals of the Monarchs, vol i. p. 200. † Ibid. 202.

‡ Magaillan's China, p. 317, and 327.

§ Du Halde, p. 177.

that Navarette says, the greatest part of their physicians are mere farriers; that they know nothing of potions, and their chief care and skill consist in little more than the recommendation and observance of a regular diet.*

From this unimproved state of an art so important to human existence, it is clear that they owe nothing to foreign or factitious aid; and although it might be urged that the Arabians, at an early period, advanced as far as Canton, where they might have communicated some of the discoveries of their physicians and philosophers, it ought to be recollected that it was the spirit of commerce which carried the Mussulmans to the confines of this remote region,† and that the power of the still, if known to them at that time, was altogether applied to the improvement and advancement of medical knowledge; a use to which, as far as I can learn, it has never yet been devoted in China. That the Arabs knew any thing of distillation previous to their intercourse with this empire, appears strongly questionable. It was under the Caliph Walid, in the year 715, that they sent ambassadors and merchants to that country. In 850, they had carried their commercial intercourse so far as to have an agent for conducting their affairs stationed in the province of Canton, and they were then permitted to extend their trade to some towns of the interior. Now, it is natural to infer, that a people so ingenious as the Chinese, and whose inventions do not seem to have been borrowed from any other nation, were more likely to impart information respecting the properties of the still than to procure it, as they had at a date long anterior to this period, possessed all those drinks with which they are familiar at the present day. Further investigation confirms this inference, and it is strengthened by the opinion of Humboldt, who says, that the process used by us in making sugar was brought from oriental Asia, and that even the cylinders placed horizontally and put into motion by a mill, with cauldrons and purifying apparatus, such as are to be seen in the West Indies, are purely of Chinese origin, and were in use at a *period long anterior* to the visit of any European to that country.

We find from the two Mahometan travellers who visited China in the ninth century, that the Chinese had no wine, but drank a liquor made from rice, a proof that they were acquainted with the great staple of the country then as at present, that of a distilled liquor from that grain; and Marco Polo tells us, that in his time arrack paid a

* Vide Navarette's Account of China. Barrow's Travels in China, 4to. p. 344. Abel's Journey, Staunton, &c.

† Robertson's India, 12mo. pp. 92, 93.

duty of three and a-half per cent. to the government, and he observed shops for the express purpose of selling rice-wine.

The Chinese annals trace a communication with other countries 2000 years before Christ; and their intercourse with Hindostan and Persia is familiar in their records 1000 years previous to the Christian era. Doctor Morrison, who has thrown considerable light on the history and antiquities of this interesting portion of the globe, states in the Chinese Repository for January, 1833, that the people of India, Egypt, Arabia, and other countries, came by the southern sea to Canton with tribute *(gifts)* and for trade. Besides, it is certain, that in the seventh century, the Chinese monarch sent ambassadors to the surrounding nations for social and commercial purposes. Silk and many other commodities were, it is well known, originally brought from India and China; and we have the testimony of Ptolemy, that Maeses, a Macedonian merchant, sent an agent to China, a distance of 2,800 miles, for the purpose of procuring this and other commodities, the luxuries of the times.* In the reign of Augustus Cæsar, among other eastern nations that sent embassies to Rome to court the emperor's friendship, are mentioned the Seres, now the Chinese, who, after a journey which occupied four years, presented him with pearls, precious stones, and elephants.

As learning leads to the highest posts of honour, the love of literature has long prevailed among this people; and their progress in moral philosophy and the belles-lettres has been by no means inconsiderable. To this advancement the knowledge of printing has greatly contributed; but although that art, according to Trigaucius and others, has been known to them above 1776 years, or as some affirm, beyond the date of the records respecting gunpowder, it has remained comparatively stationary, doubtless from the nature of the language, which renders the printing of books troublesome and tedious. It is said to consist of 60,000 characters and upwards: those employed for the ordinary purposes of life do not, however, amount to any considerable number. He who is acquainted with from 15 to 20,000 characters, is esteemed very learned, and he may well be accounted so, since it takes nearly half his life to acquire them. People in trade are conversant with such of the characters only as answer the despatch of business, depending on the more intelligent when any difficulty arises. The printer, or rather the engraver of a book, has to trace the characters of each leaf on a piece of plank, or a block of hard wood;

* Ptolem. Geogr. Lib. VI. c. xi. xviii. Vide M. de Guignes' Memoirs of the Commerce of the Romans with the Tartars and Chinese.

and Abel says, that nothing could be more simple than the method of printing which he saw. On a piece of wood, mostly pear-tree, about two feet square, carved into the necessary characters, and covered with ink, a thin paper was laid, which, being pressed down by the hand, received the desired impression. The use of moveable types in wood is confined to the printing of the Pekin Gazette and a few other periodical works. All others are printed in stereotype. The use of moveable metallic types may, perhaps, at no distant period, become general in the empire, as a manufactory of them in block tin is already established at Macao for the use of the British factory. The founders and cutters are Chinese, who execute their work with great precision and despatch.* For printing a work of any extent, a store of some magnitude is required. What must have been the room requisite for the materials of one of their dictionaries, consisting of 120 large volumes; or for the ancient and modern laws of the country which the emperor Tay-tsu† ordered to be printed in 1380 in three hundred volumes! It was a whole age after its commencement before this work was completed.

But, notwithstanding this apparent difficulty, books are said to be numerous; they are printed on one side only, and stitched in thin white paper, their size answering generally to that of our royal octavo.‡ The emperor *Tay-Tsong* is represented to have had a library of 80,000 volumes, the composition of native authors, which were neatly distributed in three large rooms, richly adorned; and that monarch was so fond of reading, that he daily turned over one or two volumes; and the famous library of Ywen-ti, which was burned in 552, consisted of 140,000 volumes.

The whole nation, says a Jesuit missionary, who had a good opportunity of observation, is much addicted to study and learning. In one province, we are told, there are sometimes upwards of 10,000 licentiates and bachelors, and the number of candidates for degrees, at a moderate computation, amounts to 2,000,000. In the Southern provinces of the empire, there is scarcely a Chinese that cannot read and write. "I have met," says Navarette, "men on the road in sedans and palanquins on men's shoulders, with a book in their hands. In cities, I have often seen Mandarins occupied in the same manner; and to induce their children to learn, the tradesmen and shopkeepers might be seen sitting behind their counters with books before them." For

* Abel's Narrative of a Journey in China, 4to. p. 229.

† Du Halde, vol. i. p. 218.

‡ Osbeck's Voy. to China, 8vo. vol i. p. 277.

the encouragement of students, says the same writer, the example is related of a poor young man who herded cows and rode upon one of them, as is usual in the country, keeping a book on her horns in such a manner that it served as a desk, and enabled him to read all the day; by which means he attained to a high station in the state. Another instance is mentioned of a youth, who being so poor that he could not buy oil for his lamp, studying at night by the light of the moon and the stars; his erudition procured him equally honorable advancement. But, although the application of the Chinese has been sufficiently laborious, we have no account of any of their publications on the useful or speculative arts. To this circumstance, combined with a constant jealousy and fear of imparting to others a knowledge of their inventions, which they consider purely their own, is, perhaps to be attributed the very brief and unsatisfactory accounts, which writers have been able to collect, of the nature and extent of their inebriating beverages. We read that, under the government of the emperor *Yu* or *Ta-yu*, before Christ 2207,* the making of ale, or wine from rice, was invented by an ingenious agriculturist named *I-tye*; and that as the use of this liquor was likely to be attended with evil consequences, the emperor expressly forbade the manufacture or drinking of it under the severest penalties. He even renounced it himself, and dismissed his cup-bearer, lest, as he said, the princes, his successors, might suffer their hearts to be effeminated with so delicious a beverage.† This, however, had not the desired effect, for having once tasted it, the people could never afterwards entirely abstain from the bewitching draught. Some have conjectured, with seeming plausibility, that *I-tye* was a near descendant from Noah. This is supported by the opinion of Doctor Hales, given in his Analysis of Chronology, who thinks that it was the family of Shem that peopled China. But the writers of the Universal History allege, that Noah himself being discontented with the party that had been formed to build the tower of Babel, separated from the main body, and with some followers, travelling eastwards, at last entered China, and laid the foundation of that vast empire. Be that as it may, a love for rice-wines was, at a very early date, carried to such excess and consumed in such abundance, that the emperor *Kya*, the Nero of China, in 1836 before Christ, ordered 3000 of his subjects to jump into a large lake which he had prepared and filled with it; while *Chin-vang*, in 1120, thought it prudent to assemble the princes to suppress

* Du Halde, vol. i. p. 145.

† Ibid. p. 433.

its manufacture, as it was the source of infinite misfortune in his dominions.*

It is related of Kèè, that he carried his propensities for drinking and extravagance so far, that, to indulge a favourite mistress, he built a room coated with jasper, had the furniture adorned with precious stones, and constructed ponds for wine in his palace.†

The produce of the grape, it would seem from this, was not so early attended to, although the cultivation of the vine had been known and practised in China from time immemorial. All the songs, which remain of the early dynasties down to that of *Han*, which commenced 206 years before the Christian era, confirm this statement, and give reason to believe that the Chinese have always been fond of wine made from grapes. Grosier says that the emperor *Ouenti*, of the dynasty of *Ouei*, celebrated it with a lyric enthusiasm worthy of Horace or Anacreon; and we find in the large Chinese Herbal, book 133, that wine made from grapes was the wine of honour, which several cities presented to their governors and viceroys, and even to the emperor. In 1373, the emperor *Tay-tsu*, who ascended the throne five years before, accepted some of it for the last time from *Tai-yuen*, a city in the province of Chensi, and forbade any more to be presented. "I drink little wine," said the prince, "and I am unwilling that what I do drink should occasion any burden to my people." According to the same writer, the vine has undergone many revolutions in China. When orders were issued for rooting up all trees that encumbered the grounds destined for agriculture, the vine suffered in common with the others; and the extirpation of it has been carried so far in most of the provinces, during certain reigns, that even the remembrance of it was entirely forgotten. When it was afterwards allowed to be planted, it would appear from the manner in which some historians express themselves, that grapes and the vine began then for the first time to be known. This probably has given rise to the opinion that the vine has not been long introduced into China; it is however certain, without speaking of remote ages, that the vine and grapes are expressly mentioned in the Chinese annals, under the reign of the emperor *Vou-ty*, who came to the throne in the year 140 before the Christian era; and that since his time the use of wine may be traced from dynasty to dynasty; or as we may say, from reign to reign even to the fifteenth century. With regard to the present state of the culture of vines in China, Grosier declares that the two

* Du Halde, vol. i. p. 150, 159.

† Gutzlaff's Hist. of China, vol. i. p. 149.

preceding emperors to *Kien-long*, with that monarch himself, who was on the throne when Lord Macartney visited the country, caused a number of new plants to be brought from foreign parts, and that three of the provinces in particular, viz. *Honan*, *Shan-tong*, and *Shan-si*, repaired their former losses by the cultivation of them.* Barrow remarked, that in his time no wine was made from the juice of the grape, except by the missionaries near the capital.† Bell, speaking of this wine, of which he partook at an entertainment given by the Jesuits, says it was not of the best quality, although the grapes of the country were excellent. According to Ellis, who left China in 1817, the vine is cultivated to considerable extent in different parts of the empire, and the Chinese having an abundance of grapes, he was surprised that they should not have wines of the choicest quality. Our wines, liqueurs, and cordials are, if possible, more relished by them than by ourselves, from which, and their general attachment to the richest and most expensive sorts of drink, it is singular that they have not had recourse to the manufacture of those beverages common in other countries. This, however, like their other peculiarities, may chiefly be accounted for by their jealous policy of not imitating foreign nations. But it might be attributed to another cause, namely, the quantity of rain, which, at the time of the ripening of the grape, falls for a period of five or six weeks, to the great injury of its vinous quality. Besides, the people look more to the size of the fruit than to its produce in wine, and for that purpose, as if not content with the quantity of rain which falls in this season, they cut trenches for the conveyance of water to the roots of the vine, in order to increase the size of the fruit. To cultivate the vine successfully in any country requires heat, a good soil, with little humidity. At Pekin, during the winter, the vine must be buried in the same manner as practised by the Cossacks of the Don, and put into training in summer. Dried grapes are in great demand. The finest description is brought from the *Ha-mi* country. Lord Macartney was presented by the emperor with grapes of an uncommon form, being more oblong than olives and about the same size. The people of Turkestan pay to the Chinese court a part of their taxes in grapes; from which, and the considerations just enumerated, it is manifest that the Chinese only partially cultivate the vine, and even that for the mere sake of the fruit as a table luxury. Such is their frugality, that they consider it a sin against humanity to cultivate fruit on account of its liquor; whilst the ground, that its growth

* Grosier's Description of China, vol. i. chap. v.

† Barrow's Travels in China, 4to. p. 304.

would occupy, could produce sustenance for many individuals who might otherwise perish from hunger.

Of rice-wines there are different sorts, but none of them have any resemblance to the wines of Europe, either as to taste or quality; being variously compounded, and never allowed in the manufacture to preserve the mere flavour of the original material. That called *mandarin*, being considered of a superior class, is drawn from rice of a particular description, different from that which is eaten.* The grain is steeped for twenty or thirty days in water, and then gently boiled. When it is quite soft and pulpy, and completely diluted and dissolved by the heat, it is allowed a considerable time to ferment in proper vats prepared for the purpose, generally of glazed earthenware. The yeast employed is made from wheat, in which several wholesome ingredients are added during the process of fermentation. These consist of such fruits and flowers as impart an agreeable flavour and pleasing colour. At the end of several days, when the motion, or agitation occasioned by the fermenting process, has subsided, and when the liquor has thrown up all the scum or dross, it is drawn off into glazed vessels, where, by a second species of fermentation, it clears itself and developes, by the taste and smell, its good or bad qualities. When sufficiently fined, so as to show by standing for some time, its body and colour, it is put into small jars, in which way it is commonly sold and sent through the empire, or to Tonquin and Corea. This wine is usually so strong, that it will keep for a great many years, or, as some say, for ages. Within the empire it is principally consumed among the higher orders, who can afford to buy it; and when exported it sells very dear. The lees are distilled, and yield a strong agreeable kind of spirit, like brandy. This is called *show, choo, sau-tchoo, sam-tchoo*, (literally burnt) or hot wine. The town of Cha-tching, north-west of Pekin, near the great wall, is celebrated for sam-tchoo. The city of Kyenchang, in the province of Kyang-li, is also noted for a fine species of this wine, while that of *Vû-si-hyen* in Kyang-nan, is in great esteem, owing its excellence to the goodness of the water found there.† The city of Ta-chew is a great mart of this spirit, from which it is exported to all parts of China. Navarette, in his journey to the imperial residence, remarks, that in the district of the city of Kian-hoa, the liquor of this class was made so good, that he felt no regret for the wines of Europe. He represents it as exceedingly wholesome, and gives a proof of it in the instance of a person of rank, above seventy years of age, with whom he was acquainted, and

* Du Halde, vol. i. p. 303. † Ibid.

who had been in the habit of drinking at breakfast, for the greater part of his life, a pint and half of this wine. Some of the rice-wines are so highly perfumed, and so odoriferous, that on opening a bottle the air of the apartment assumes an agreeable fragrancy; such is the state of perfection to which these people have arrived in the making of this luxury. Captain Hall, when in Chili, met with a kind of lemonade, the fragrance of which filled the whole house.* A description of liquor termed *Sew-heng-tsow* is distilled in China from millet, or *kao-laing*, (the holcus sorghum of naturalists) which is very palatable, and, from its mildness, gently excites the animal spirits without producing intoxication, or any other bad effects, unless immoderately taken. This is a favourite beverage used even at the breakfast table of every man of quality, where it is always drunk hot, and seldom in less quantity than two cups at a time by any individual.

The denominations of the wines made from rice and other grain are distinguished by their respective colours, which are generally yellow, red, white, or pale; hence if the wine be yellow, it is called *hoang-tsieou*, *hoang* signifying *yellow*, and *tsieou* fermented liquor. But it has different names, and is differently estimated from the respective places of manufacture as before stated. A bottle of Kiannan wine, there called *hosi-kuen* from the name of a fountain, is sold for about eight pence. A wholesome and much esteemed liquor, termed Chao-tsing-tsieou is so called from a town in the province where it is made, and is sold at a moderate price, being from four pence to six pence the bottle. Tse-kiang, another fermented beverage, has an agreeable tartish flavour, with strong intoxicating qualities, and is in high repute. To tell a man that he drinks *Chao-tsing-tsieou*, or *Tse-kiang*, is the same as to say, he lives too voluptuously, or drinks too deeply.

In many of the provinces, an excellent description of wine is made from the palm-tree, and is called *Cha*, a term which, in the amplitude of the Chinese language, is also given to tea; but the process of making it differs little from that as practised in India, and already described. Navarette says that a most superior and delicate species of wine is prepared from the quince. But in a country so extensive as China, abounding in every variety of fruit that grows in other parts of the world, as well as some peculiar to the soil, with grain and esculent substance that contain saccharine matter, what, it may be asked, in the hands of so ingenious a people, must be the number of wines or vinous liquors that daily sparkle on the tables of the luxurious?

* Capt. Hall's Journal, vol. i. p. 31.

The festivals and private entertainments of the Chinese, which are numerous, give consumption to every description of drink. At all their entertainments much ceremony is used, but this need not be wondered at, when it formed a matter of state policy to regulate even the etiquette to be observed at social and convivial parties. When an invitation for dinner is given, a large sheet of red paper is sent several days before, couched in terms of the most polite nature, and written in all the pomposity of the oriental style. The following is a copy of a note of invitation sent from a Chinese of consequence at Canton, to a foreigner, inviting him to a marriage feast :—

" To the great head of literature, venerable first-born, at his table of study. On the 8th day of the present moon, your younger brother is to be married. On the 9th having cleansed the cups, on the 10th he will pour out wine, on which day he will presume to draw to his lonely abode the carriage of his friend. With him he will enjoy the pleasures of conversation and receive from him instruction for the well regulation of the feast. To this he solicits the brilliant presence of his elder brother; and the elevation to which the influence of his glory will assist him to rise, who can conceive ?"

Nor is such an invitation supposed to be given with sincerity, until it has been renewed three or four times in writing. On the day previous to the feast, another solicitation is sent on rose-coloured paper, by way of a remembrancer, and in order to ascertain whether the guest will attend. Besides, on the day appointed, the invitation is again repeated to inform the persons invited that the feast is ready, and nothing wanted but their presence. When the company have arrived and partaken of some refreshments, the dinner commences, the wine cups are filled with Sew-heng-tsow, the host arises, all the guests follow his example, and each holding a cup in both hands, and saluting each other, drink the contents and sit down to the repast. The cups are sometimes replenished with other domestic liquors, or cordials made from lytchees, oranges, pine-apples and other fruit, which, although rather strong, are pleasing to the taste. *Sam-tchoo*, or *Fan-Tsow*, is always offered after the commencement of the second course, and on the serving of every new dish, cups of Sew-heng-tsow are swallowed. During the repast, the guests pledge each other after the European manner, and sometimes with such etiquette that, with the cups held by both hands, the parties remove to the centre of the room raising and lowering their cups even to the ground, repeating the ceremony three, six, or nine times, watching each other's movements strictly, till their cups are brought to their lips at the same instant, when they empty them of their contents, and, turning them downwards, shew

that not a drop has been left, after which they retreat in the same ceremonious order to their seats. Every movement from the beginning to the end of the entertainment is equally formal. Instead of grace or a prayer before dinner, as is the custom in Christian countries, the master of the house, when his guests are assembled, takes a cup of wine, and after bowing to the company, solemnly advances to the court-yard and raising his eyes and the cup to heaven, pours out the contents on the ground as an offering of respect and satisfaction to the deity, to whom he thus expresses gratitude for the pleasure of seeing his friends. Each guest at these entertainments has a table to himself, and the one for the master is always below the rest to shew his regard for the company. It is customary on those occasions to call in strolling comedians to add, by their performance, to the pleasures of the social circle, which are seldom considered complete without them. When the guests are about to sit down to dinner, four or five actors richly dressed enter the room, and, as a mark of reverence to the assembly, bow so low that their foreheads touch the ground, which ceremony they repeat four times. Then one of them presents a book in which are written, in letters of gold, the titles of a number of comedies that they can perform. One being chosen, the acting commences to the music of drums, flutes, fifes, and trumpets. A large vacant space left between the tables, which are placed in two rows, serves for the stage; and instead of side-scenes, the actors make use of the adjoining rooms, from which they come to perform their parts. A number of persons are frequently admitted into the court-yard to enjoy the performance, but they form no part of the guests. The women are also present without being seen, having accomodations behind a lattice, through which they can behold all that passes. Jugglers and mountebanks are often engaged to enliven the entertainment, and their pranks and deceptions are wonderful. One of them will desire a guest to choose a glass of some favourite liquor; when, by boring a hole with a gimlet in any of the pillars by which the roof of the apartment is supported, he will draw through a quill the liquor required. In a similar way, other extraordinary feats of leger-demain, with pantomimic tricks, are exhibited. A dessert, or supper, follows the dinner, when the same ceremonious conduct is observed. Larger cups, however, are then used, and the master of the house drinks with less reserve in order to encourage the company to follow his example, which they generally do pretty freely. All is over about midnight, when the party repair to their respective homes, carried in chairs, preceded by domestics who have large lanterns of oiled paper, on which the name and rank of their master are usually

inscribed. Without these precautions they would be stopped by the watchmen, to whose officer a card of thanks is usually presented the next morning. On the day after the dinner, the host sends a large red paper to each of the guests apologizing for the badness of the dinner (which, by the bye, always consists of the greatest delicacies), and an immediate reply is returned on the same sort of paper, praising, in the like bombastic style, the unbounded gratification his feast had afforded, and complimenting him on the polite manner with which he conducted himself towards all his guests.

Dinners, when given to Europeans, are sometimes served in the English fashion, with such meat and wines as they have been accustomed to at home; and on these occasions the usual ceremonies are dispensed with. In Pekin, it is common for some of the higher orders to resort to hotels or taverns for the purpose of entertaining their friends, where a dinner of twenty different dishes may be had at from nine to ten francs for each person.* The Tartars have a good deal altered the ancient ceremonial of the Chinese repasts, but there is still too much form observed to render their entertainments pleasing, particularly to strangers.

The following mode of making beer is observed in China. The liquor is called *tar-asun*, and is extracted from barley or wheat. The grain from which it is produced undergoes a certain degree of malting, and after which it is coarsely ground and put into a keive, where it is moistened slightly with warm water, and closely covered. After it has stood for some time, boiling water is again poured upon it, and the whole is stirred until it appears completely wetted and mixed. This operation being performed, the keive is covered a third time, and permitted to stand as before. It is then opened again, stirring the whole contents and pouring in boiling water, until the light material rise to the top, and the liquor assumes the strong flavour of the grain, which is known by its having gained a deep colour, and an adhesive or glutinous consistency. When the liquid has become lukewarm, it is poured into a narrower vessel than the keive; and after being mixed with a small portion of Chinese hops, the vessel containing the liquor is put down into the earth for the purpose of fermentation. The Chinese hop is a prepared one which bears its leaven within itself, and excites fermentation, though the *humulus lupulus*, or common hop, is found climbing through the hedges.† As soon as the working has ceased, and the liquor has begun to subside, large bags are filled with it, or rather coarse sacks made of a

* Timkowski's Travels, vol. ii. p. 173.

† Osbeck's China, vol. i. p. 336.

thickness suitable for the purpose, after which they are put into a press. The liquor extracted is poured into barrels, bunged up with care, and immediately after placed in a cellar, as without this precaution it would soon become sour. In the distilleries, the same process is observed for the preparation of the wort, or wash, from wheat, rye, or millet, except that no hops are used when the liquor from the grain is intended to be distilled. Before this extract is submitted to any kind of fermentation, it is mixed with a preparation called *pe-ka*, consisting of rice-flour, licorice-root, aniseed, and garlic ; this, it appears, not only accelerates fermentation, but is supposed to impart a peculiar flavour. The whole of the mixture being duly fermented, undergoes distillation, and the *Sau-tchoo* thus prepared, may, as Barrow remarks, be considered as the basis of the best arrack, which in Java, as already noticed, is exclusively the manufacture of the Chinese, and is nothing more than a rectification of the above spirit, with the addition of molasses and juice of the cocoa-nut tree.* Before distillation, the liquor is simply called *tchoo* or wine; after that, the word *show*, *sau*, or *sam*, is added, to express its hot, burning, or fiery nature. The *tar-asun* is a sweet liquor, sometimes equal in strength and purity to Canary wine; but to strangers it has a disagreeable flavour. Bell, who accompanied the Russian ambassador to Pekin, in the year 1720, observed, that the emperor Kamhi and his courtiers were very fond of this liquor, and a good cup of it warm, was presented to him of a cold morning by the emperor's own hands, which he found very refreshing.†

The great materials of distillation throughout all China are rice and millet, the former of which, according to Sir George Staunton, is produced in great abundance in the middle and southern provinces of the empire; while the latter supplies its place in the northern. The millet of the northern provinces is the *holcus sorghum*, or Barbadoes millet: the Chinese call it *kow-leang*, or lofty corn. It is worthy of remark, that as the barley-corn was made a standard of measure by Europeans, so the Chinese formed their measures of capacity by the number of grains of millet which they contained. May it not, therefore, from the antiquity of this nation, be inferred, that the practice of measuring by grain was borrowed from them, when it appears from their most ancient records to have been in use from the earliest period. An idea can scarcely be formed of the immense culture of rice and millet, even on learning that the mere tribute, paid from the

* Barrow's Trav. p. 304.

† Bell's Travels, vol. ii. p. 9.

different provinces into the royal treasury, yearly, as a duty on the lands, amounts in those different kinds of grain to 40,155,490 sacks.* According to the Chinese geography, *Daisin-y-tundshi*, the tribute of wheat in Chinese *dân*, or bushels, amounts to 6,396,286.† But when the steepest hills and mountains are brought into cultivation, we need scarcely wonder at the agricultural riches of China. The water which runs through the level of the valley, is there taught to flow across the mountain, and from terrace to terrace, to give nourishment to vegetable matters, and assist the hardy labours of the husbandman. The principal depot for rice and other grain is at Pekin. In that city are immense magazines for storing the contributions from the several states. The corn and rice are conveyed to the capital by small boats, or junks, to the number of 10,455. The barges appointed by the government for the conveyance of provisions, silk, rice, and other necessaries from the southern provinces to Pekin, amount to 9,999, which number is kept up with a sort of religious punctuality. The canal by which these are conveyed is said to have been constructed for that special purpose, and was, therefore, denominated *Yun leang ho*, which signifies the "grain-transmitting river." At every dike, the cargo is shifted into other boats placed on the opposite side; and thus, at immense labour, is transported the produce of the extremities of the empire to the central parts. For the convenience of removing the cargo from one boat to another, the rice is carried in sacks and stowed on deck. Adjoining these magazines, is one belonging to the government, for the express purpose of holding rice-wine, arrack, and other commodities. A missionary relates that, in the year 1664, he bought the very best wheat for three ryals (eighteen pence), and rice of the first quality, "every grain as big as the kernel of a pine-apple," for five ryals (half-a-crown) the bushel. In the province of Shan-tong, in the same year, wheat was sold for one ryal, or six-pence the bushel. The wheat sent yearly to the treasury from this province, is upwards of 1,271,494 dâns. The produce of this empire being so little liable to change, unless from unfavourable seasons, I am

* In 1696, the quantity of rice and corn brought into the emperor's stores consisted of 43,328,834 sacks with 38,550lbs. of dried fruits, viz. grapes, figs, nuts, and chesnuts.

† The dân is equal to12,070 cubic inches French. The *Daisin-y-tundshi* is very scarce, and not to be had even among the booksellers at Pekin; and if a copy of it could be procured, it would cost at least 200 rubles of silver. Timkowski, who was in China, in 1820, was informed by Father Hyacinth, of the Russian college, that he had translated the greater part of this valuable work into the Russian language, and it is to be hoped that it will speedily make its appearance in an English dress.

inclined to think that the prices are still the same. When Barrow was at Pekin, rice sold from three-halfpence to two-pence per lb., bread four pence, and wheat-flour from two-pence halfpenny to three pence. Dobell, a late writer,* makes the price of rice cheaper, it generally selling from three quarters of a dollar to one and a quarter dollars the picul of 133⅓ English pounds.

As there does not appear any regulation confining distillation to particular individuals, all the makers of wine distil from the lees, while other persons manufacture from the grain direct. The produce is distinguished in Europe under the general appellation of *rack*, *raki*, or *arrack*, a term in use from the earliest dawn of civilisation. The manufacture of this liquor, Grosier tells us, is carried on to a great extent through the whole of the Chinese dominions. Its strength generally exceeds the common proof, and is free from that empyreumatic odour so often perceptible in European spirits. Numbers of carts laden with it enter Pekin daily. The duty is paid at the gates, which are nine in number, three on the south front, and two on the other three sides, and the liquor is sold publicly in more than a thousand shops that are dispersed through the city and suburbs. The sale of this attractive article is conducted in the same way through the whole of the cities, towns, and villages in the fifteen provinces; and it is not a little surprising that, amidst a population of 333,000,000, the consumption of so dangerous a beverage should be attended with so few fatal consequences, since we are assured on the testimony of the most respectable writers,† that a quarrel or murder occasioned by intoxication is rarely or ever heard of. But, I apprehend, that to the strictness of the police, and to a regulation rendering every tenth housekeeper accountable for the conduct of the nine neighbouring families,‡ more than to the steadiness of the Chinese, must be attributed this forbearance, since human nature is much the same in every region of the world. As to the population of this empire, writers disagree. Lord Macartney and Staunton rate it as just stated; the Abbè Grosier makes it 200,000,000; and Father Allerstain, 198,213,713; others limit it to 150,000,000. Most writers, however, agree with Staunton, and from the opportunity he had of obtaining accurate information, it may be presumed his estimate is more to be relied on than any other. The population, as given by order of the emperor Kea-king, in 1812, appeared to be 360,279,897.

* Travels, vol. ii. p. 192.

† De Guignes, Barrow, Osbeck, Van Braam, Sil. de Sacy, &c.

‡ Staunton' Embassy, vol. ii. p. 56.

The census of this vast empire is taken annually, and therefore ought to be more accurate than that of any other nation, as officers appointed for the purpose visit every village, town, and city, to collect the returns of the householders, who are obliged to attach, on the outside of their doors, the number of the inmates, male and female, attested by their signature. These returns are made up and forwarded to the government. No kind of imposition can be practised, as the reporter is held accountable for the truth of his statement; and any deviation from accuracy is most severely punished. Were such a practice adopted in this country, parliament could never be at a loss to ascertain the physical and disposable strength of the empire at any time, and thus make a considerable saving in the expense of obtaining such returns.

In so dense and populous a country, houses for general accommodation are very numerous. Abel gives the following picture of the public houses he had an opportunity of visiting, while the embassy stopped at the city of Tong-chow, on its return from Pekin:—These, says he, were large open sheds, fitted up with tables and benches, and affording means of gambling and drinking to the lower orders of the people. They were generally filled with players at dominos or cards, who seemed to enter with intense earnestness into their game. The cards were small pieces of pasteboard, about two inches long, and half an inch wide, having black and red characters painted on them. The beverages most largely partaken of in those houses were tea, wine, and *Sam-su*. All the guests were smoking from pipes of various lengths, from two to five feet, formed of the young and tender twigs of bamboo, fitted with bowls of white copper about the size of a thimble.* Every person smokes to excess, and should any one in company refuse to smoke, he is accused of affectation, as it is deemed necessary that every man should make a chimney of his mouth.† The Chinese, in their cheerful and idle moments, amuse themselves at a game on the fingers to procure drink and enjoyment, called *houa thsionan*, or *tsoey-moey*. It is thus described by Dobell:—The wine-cups being filled, the two persons engaged stretch forth their right hands towards the centre of the table, with their fingers closed. When the hands come almost in contact, they open as many fingers as they please, and each person cries out the number he opens, as one, three, five, &c. Whoever hits on the exact number of fingers presented by both persons, obliges his adversary to drink. "I have seen," says he, "this game continued for an hour, until one of the parties, finding himself the loser, and his head affected, is forced to retire. It is an

* Abel's Narrative, p. 117. † Dobell, vol. ii. p. 264.

extremely noisy amusement when any number of guests engage in it. In passing up and down Canton river on a holyday, one's ears are assailed on all sides with this boisterous merriment." Another festive trick, which they practise, is that of rapidly passing a bunch of flowers from hand to hand, during which a kettle-drum is kept beating; and whoever holds the flowers, the instant the drum is stopped, is obliged to drink a cup of wine as a forfeit. The public inns and victualling houses have their fiddlers and comedians to entertain their guests at meals, and other occasions of refreshment.* Such houses, however, are seldom frequented for the mere love of drinking, and although intoxication is not unusual, that vice forms no part of the general character of the people. Mr. Dobell says, that the Chinese are in general sober, and that habitual intoxication is very rare.† Ellis is of a contrary opinion, for he says, that whatever may have been the assertion of travellers, his experience led him to consider the Chinese scarcely less addicted to the use of spirituous liquors than Europeans; and that it is only their superior sense of decorum that prevents them from exhibiting themselves as often in public under the influence of spirits. There are likewise laws to regulate the sale of spirituous liquors and to guard against irregularities. One of these enactments says, "A man, who, intoxicated with liquor, commits outrages against the laws, shall be exiled to a desert country, there to remain in a state of servitude." This judicious ordinance can scarcely fail in producing the desired effect, as the dread of punishment ought to counterbalance every inducement to criminal indulgence. Martini and Navarette have stated, that the Chinese sometimes drink to excess, although they are the reverse of a drunken people. Occasional intoxication is not considered shameful, but treated with ridicule or pity; and the enactment here cited is only to restrain habitual and egregious offenders.

The rice-wines are all drunk warm, as indeed is almost every other kind of fluid. Whether this practice is owing to national habit, or that it is more salutary to the people, who are of weak constitutions and subject to pulmonary and bowel complaints, it is not so easy to determine; but a general opinion prevails that fermented and spirituous liquors made hot, are accounted not only agreeable, but preventives of disease, and hence one reason why the custom is so prevalent. In warm climates, it is considered that heated beverages are the most wholesome, and contribute to alleviate the sensations of fatigue. Even in the parching climate of Hindostan, weak but warm liquors

* Nieuhoff's Travels in China. † Travels, vol. ii. p. 239.

are ready for all travellers at the public inns or *choultries*. Through China, in like manner, warm tea and other hot beverages are sold at public inns, along the roads, canals, and rivers; and it is not uncommon to see porters or carriers lay down their burdens to refresh themselves with a cup of tea, and afterwards pursue their journey. In Bootan and Thibet, it is the first object of a traveller to procure for himself a dish of hot tea, which is generally served to him the moment he arrives at a caravansary. The Chinese, rather than drink their liquor cold, plunge the jug in which it is contained into boiling water, until it obtains the proper temperature; but the general practice is to warm it over a fire. So careful are persons of rank respecting the quality of their drinks, that besides the heating of all manufactured liquors, they seldom take water without its being first subjected to distillation, in order to free it of animalculæ or other impurity. Some philosophically account for the Chinese and other Orientals drinking their liquors warm, on the grounds that in all hot countries the stomach loses its activity by a too copious perspiration; and consequently, every thing which warms it, not only invigorates it but repairs its losses. The contrast is remarkable; when we compare the Chinese custom of drinking warm beverages even on ordinary occasions, with that of the Russians, who, when in a profuse perspiration after coming out of a warm bath, drink copious draughts of mead as cold as it can be procured, without sustaining the least injury. It is customary in China to eat cold meats, though the drinks are warm, and they are so particular in this respect, that attendants are appointed at feasts to pour hot wine into the cups, and remove that which is cold. The drinking cups usually employed by these people are either of silver, porcelain, or precious wood. Very small cups are used at first, but about the middle of an entertainment they are changed for larger. They are always presented full, having no idea of half-measures. It is facetiously related that a parsimonious host, afraid of filling a bumper, presented a friend with a glass only half full, when the guest, attentively looking at it, said,—"This glass is too deep; one half must be cut off." The astonished host inquired the reason, to which the other replied,—"If the upper cannot hold wine, of what use is it?"

Among the Chinese, it is a common saying that wine is the way to try people's strength; and that those that are strong always shew it by their eating and drinking; but that there are only three occasions on which it is strictly proper; and for each of these, three cups are allowable; these are for friendship, mirth, and to satisfy nature. Sir William Temple's regulation, mentioned in the Spectator,

far surpasses this for its temperance.—"Let the first glass be for myself, the second for my friends, the third for good humour, and the fourth for mine enemies."* After dinner, in order to promote a relish for a cup, some highly seasoned or salt meat is used, which they term a *guide*, and among friends when the liquor begins to exhilarate, or the party are desirous of retiring, the same enticing inducements to detain them are practised as in Europe; so that social moments, we may see, greatly assimilates man in every country.

As distillation occupies the attention of multitudes in China, it is generally conducted on a limited scale by each individual. The machinery of a still-house much resembles that in use on the continent of Europe, or what is employed in this country by illicit distillers, with the exception that the head and condenser of the still are of a different construction, having no worm-tub. The condensation is effected by a cylinder full of water surrounding the head, and kept full either by a small stream or being poured in by the hand. The head is, for the most part, globular, with a neck to fit into the breast or body of the still. Near the neck, inside the head, is a gutter from which a tube projects through the cylinder of water to convey the condensed vapour into a receiver, as shewn in the annexed drawing.

* Spectator, vol. iii. No. 195.

The process of distillation is laborious, but, as already observed, the mechanical arts in this country are not progressively advancing, and, therefore, the Chinese are regardless of the toil, which a little exertion and ingenuity might obviate. The still is placed in a furnace of brick work, and the fire so directed that the whole force of the flame may bear on the central parts of the bottom. By this means much saving of fuel is effected, and the economy of the people is shewn here as in the other pursuits of life, it being a maxim among them to let nothing go to loss that can be turned to advantage.

Although coal is plentiful in some of the provinces, yet a great deal of it is deficient in that gaseous quality which renders it valuable. Hence wood becomes expensive, and is for the most part sold by weight, bringing a price in proportion to its goodness for fuel. Soft pine is the cheapest, because it is easily consumed. Charcoal is common, but very expensive. Under these circumstances, great caution is displayed in every instance in which fuel is requisite.

When scarcity or famine is dreaded, distillation is prohibited, as in Great Britain, by proclamation. Where stills are found afterwards at work, the still-houses are destroyed, the workmen thrown into prison, whipped, and condemned to carry the *cangue* or *kia*, a degrading frame of wood placed round the neck, weighing from one to two hundred pounds, which renders the culprit unable to do any thing for himself so long as he is obliged to wear it.* The facility with which fuel is conveyed by canals through the provinces, and the ease of procuring grain in every town and village, tend greatly to the encouragement of distillation.

The skill of the Chinese in distillation is not confined to the manufacture of brandy from rice or millet alone. Besides the quantities that are distilled from the produce of the palm and other fruits, a very ardent spirit, said not to be unworthy of the emperors, is produced from the flesh of sheep.†

The nature of the process seems to be as yet a secret to Europeans; some indeed have stated, that several vegetable substances are employed, but this assertion appears to rest on mere conjecture. The use of this liquor was first introduced by the Tartars, whose fondness for the repasts which the flocks and herds of their native wilds afforded, induced them to subject to the action of the still, the flesh of an animal that had long formed the basis of a more simple, though perhaps not less intoxicating beverage. I allude to their *lamb wine*.

* Staunton's Translation of the Penal Code of China, 4to. p. 12

† Du Halde, vol. i. p. 303. Davis's China, vol. i. p. 330.

The Chinese term for this liquor is *Kau-yang-tsyew.* It is said to be a very strong, nutritious beverage, and the Tartars delight to get drunk with it.* Kang-hi, who was of Tartar origin and wielded the Chinese sceptre for sixty years, encouraged the manufacture of this spirit by the use he made of it himself. It has, however, never been a favourite in China, and we have little reason to expect that its admirers, should any of them visit Europe, will ever be regaled with a cup of this exhilarating draught. Of a similar description is, perhaps, the spirits made at Surat, denominatd *spirit of mutton, spirit of deer, spirit of goat,* which derive their names from the practice of throwing into the still a joint of mutton, a haunch of venison, or a quarter of goat, with a view, as is conceived, to add a mellowness and softness to the spirit.†

The inhabitants of the province of Quang-tong distil a very pleasant liquor from the flowers of a species of lemon tree, which are said to possess an exquisite odour, and like those of the Mahwah or Madhuca of Bahar, in India, have a strong saccharine quality. The fruit of the tree is almost as big as a man's head; its rind resembles that of the orange, but the substance within is either white or reddish, and has a taste between sweet and sour.‡ The spirit is perfectly clear and transparent and is held in high estimation.

From the refuse of their sugar plantations, in which the cane grows to great perfection, particularly in the southern provinces, much rum might be manufactured, but no attempt has yet been made to distil that article. So great is the trade in sugar, that 10,000,000lbs. were exported from the country in 1806. The sugar exported from Canton for American consumption in four years, from 1815 to 1819, amounted to 39,670 piculs; and from that port, in the same period, were exported for European use, 21,400 piculs.§ The entire quantity carried from Canton by the American traders, from 1804 to 5th January, 1819, appears to be 67,673 piculs;‖ and the quantity imported into Great Britain, the produce of the East Indies and China, for seven years from 5th January, 1815, to 5th January, 1821, amounts to 1,073,730 cwt., which, at £2. 2s. per cwt., gives a sum of £2,254,833, being at the rate of $4\frac{1}{2}d.$ per lb. The Chinese are expert in the manufacture of sugar and sugar-candy; the latter has been celebrated.

* Grosier, vol. ii. p. 319.

† Grose's Voyage to the East Indies, vol. i. p. 112.

‡ Du Halde, vol. i. p. 109.

§ Parliamentary Report, 7th May, 1821, p. 183.

‖ Ibid. p. 315.

So far back as 1637, both these articles could have been purchased for three half pence per lb. of a quality as white as snow.

In their sugar establishments, simplicity seems to be the prevailing consideration. Mr. Abeel, who visited one of these manufactories in the island of Whampoa, describes the mill which expressed the liquor from the cane, as composed of three vertical cylinders made of coarse granite, with wooden cogs. The coppers or boilers were made of cast iron, which the Chinese have the art of reducing almost to the texture of common paper, and of welding, when broken, with entire facility and firmness. These boilers were arrayed triangularly, and with little regard to those principles of granulation which are elsewhere observed. All were performed by manual labour; the mill was placed below the level of the boilers, and the liquor carried in tubs from the one to the other. As it attained consistency in each of these vessels, instead of being passed through a strainer into the next, it was transferred by hand to another part of the building, whence, after the process of filtration, it was returned to its appropriate cauldron.*

The wines of Europe are now imported into China, like other articles of merchandise, and are often sold to considerable advantage. The Xeres, or Sherry wine, is preferred on account of its strength, and because it is not liable to change by heat. The Spaniards send wines to Manilla, Macao, and other parts, from whence the Chinese bring a considerable quantity, especially for the court of Pekin.†

The East India Company exclusively exported to China in ten years, from 1810 to 1820, beer alone to the value of £14,309, and wine in bottles and packages for the same period to the amount of £7,383. This trade is on the increase, and the reader is referred to an account of all beer, ale, and spirits, both British and foreign, as well as wine, exported from Great Britain to the East Indies and China for a period of seven years, as given in the Addenda, for the purpose of shewing at one view the extent of this commerce, and its importance as a source of wealth and consumption to our home and foreign manufacture. The Americans also are carriers of these articles. In the year ending 5th January, 1819, one thousand gallons of gin were imported by them into Canton. The superior quality of European spirits renders their importation desirable, as much confusion and danger have arisen in the immoderate use of the ardent

* Abeel's Journal of a Residence in China, p. 83.

† Osbeck's Voyage to China, vol. i. pp. 315, 316.

spirits of the country by the British sailors who frequent this port, and of whose habits the Chinese take advantage by mixing their liquors with ingredients of an irritating and maddening effect. It superinduces a state of inebriety more ferocious than that occasioned by any other spirit, and leading the men into the most riotous excesses, tends to establish in the minds of the peaceable inhabitants the most unfavourable opinion of the English character. When a European vessel touches at Canton, it is common for the natives to come on board and barter whatever articles may mutually answer the parties. Among these, *sam-su* is not the least in request. This liquor is generally carried in small pots ; and is so cheap, that nearly three pints may sometimes be purchased for about three pence half-penny ; and for a small coin called *joss*, value about one-tenth of a penny, a very strong dram of *sam-su* may be obtained. The gentleman who assured me of this, was some time in China, and was often surprised when his vessel lay in the roads off Whampoa, to see with what despatch a quantity of *sam-su*, when ordered, was brought on board from the shore. He was informed by the inhabitants that there was no restriction on the making of it by any enactment of the state. The *sam-su* brought to the vessel was generally of a yellowish colour, and to his taste rather disagreeable ; but custom rendered it palatable. He also added that he had drunk arrack distilled from rice, not inferior either in strength or quality to any of our best whiskey. Two boats, called *hoppoo-boats*, are usually fastened to the stern of every ship anchoring at Whampoa. These are supplied with every necessary that the sailors stand in need of, and among the rest with a large store of *sam-su*. Notwithstanding this convenience, adventurers throng from the shore carrying quantities of drink and other articles ; an intercourse often attended with unpleasant consequences. The liquor now distilled at Canton is of a superior description to that formerly manufactured, owing to a Chinese from Penang having lately introduced the making of rum, since which that spirit can be purchased at a cheap rate.

In contrasting the habits of the Chinese with those of other nations, we cannot but admire the general regularity and temperance of this people, and the wisdom of the government by which they are held in such moderation. Montesquieu has asserted, that drunkenness increases in proportion as we recede from the equator to the poles.* This assumption is highly questionable, particularly as regards China, for, if such were the fact, the Chinese in the northern

* Spirit of Laws, vol. i. b. 14, chap. 10.

provinces would be greater drunkards than those of the southern; although the contrary is the case. For it does not appear that inebriety prevails more at Pekin than at Canton, and still much less in many parts of Europe, than in several portions of the torrid zone. To other circumstances, therefore, rather than to approaches towards the poles, should the love of strong drink be attributed. We find that man in every clime has recourse to inebriants, either in a liquid or in a vegetable form, and that more is to be imputed to the genius of the religion than to either the climate or the want of inclination for indulgence in intoxication. The Mahometans, the Budhists, or Lamaics, the Brahmins, and other sectarians of the East, although prohibited the public use of wine, often indulge in it to excess; and when it cannot be procured, they purchase enjoyment of a similar nature, not so favourable to the prolongation of animal existence. The sobriety and moral rectitude of the Chinese have been secured, through a long succession of ages, by a systematic combination of laws which have so blended the wisdom of the government with the virtue of the people, that the stability of the empire has been preserved unshaken from all external force and internal commotion, since the days of Confucius to the present time.

In the tributary state of Ha-mi, which, though surrounded by deserts, is accounted one of the most delightful countries in the world, pomegranates, oranges, peaches, raisins, and prunes are of the most exquisite taste; and the *jujubes*, or dates, are so juicy, and of such delicious flavour, that the Chinese call them perfumed jujubes. The melons are brought to Pekin for the emperor's use, and have the singular property of keeping fresh during the greater part of the winter. Raisins are a most important production, and are of two kinds; one like the Corinthian, and the other like those of Malaga. They are said to possess high medicinal virtues, and are much extolled for their efficacy in many obstinate diseases. Wine is made, and of such excellent quality, that it is transported in skins by means of camels into various parts of China. It was from this region, that Tai-song caused the vine plants of the species called *majou* to be brought and planted in the imperial gardens at Pekin, and it is asserted by some, that the art of making wine was first learned here by the Chinese. The climate of Ha-mi, it is thought, is more favourable to the culture of the vine than that of France; and the quality of the grapes far exceeds that of most European states. The country is embosomed in mountains, which protect it from the north and east winds, and as it seldom or never rains, the vineyards are watered from reservoirs constructed at the foot of the mountains, from which

they are supplied by copious streams that trickle from the melting snows on their lofty summits. Vast quantities of the grapes are preserved, and form a valuable branch of commerce. They are not pulled until quite ripe, and being carefully picked and dried in the sun, are packed in mats, in which they become shrivelled, but without losing much of the richness and flavour for which they are so remarkable. Large packages of these grapes form a portion of the annual tribute sent to the government stores at Pekin. After supplying the imperial tables, they are sold to the Mandarins and such of the inhabitants as can afford to buy them. A most excellent description of brandy is distilled at Ha-mi; and drinks of various kinds are made from the fruits which so plentifully abound. Many of the nomade tribes of Eastern Tartary consume a good deal of the liquors of this oasis of the wilderness, for which they barter a variety of articles.

The island of Hainan, although between four and five hundred miles in circumference, has not been described by modern geographers with that accuracy of delineation which an island of such magnitude merits, owing to the paucity of information arising from the want of that intercourse which the extent of European enterprise has enabled us to obtain concerning other portions of the globe. The defect, however, is in a great degree supplied by the late journey of a gentleman from Manchao, in the south coast of Hainan, to Canton, in the years 1819 and 1820. He describes the inhabitants to be in a high state of civilisation; the towns and villages numerous, and some of the cities so populous as to contain 200,000 inhabitants. The agricultural products of the island are much the same as those on the continent; and every portion of it is well cultivated. Rice is the principal grain raised for food, and from which the wine used in the island is principally made. The palm abounds, and cocoa-nuts form an article of export. The cane is cultivated so extensively as to afford a considerable supply of sugar for China. In the towns and cities, the shops are represented as highly respectable, while the artisans have arrived at an astonishing degree of perfection in the mechanic arts. In carving, polishing, and mounting cocoa-nut shells, they display great ingenuity, forming out of this material various domestic articles of a beautiful jet black, elegantly ornamented with silver.

The liquors of Hainan are much the same as those used in the Chinese empire, and are all drunk warm. An anecdote is related by the traveller just mentioned, who, having called on the governor of Keung-chow-foo, the capital, was treated with wine: but the servant who attended him, in his officiousness to fulfil his master's orders, poured the hot liquor down the traveller's throat, cup after cup, in

such quantities, and so rashly, that he made him not only tipsy, but scalded his mouth into the bargain. The inhabitants of this island, in their commerce with China, employ a great number of junks, some of 400 tons burthen. They generally go in fleets; that in which our traveller passed into China was very numerous; the river, for a considerable distance, as he expresses it, being covered with a forest of masts. The cargoes, in general, consist of sugar, betel-nuts, salt, indigo, tanned hides, tobacco, and cinnamon, for which are brought in return the various matters necessary for the wants of the Hainanese. Among these are cotton, furs, English broad-cloths, sweet-meats, liqueurs, flints, porcelain, and opium. The habits and moral conduct of the people of Hainan resemble those of China so much, that further observation on that head is unnecessary. As in Tonquin and Cochin-China, they distil arrack mixed with calamba, which imparts to that liquor a flavour highly esteemed by the natives. This wood grows in the wild and mountainous parts of the island, and has a most delicious perfume. It is highly valued both in China and Japan, where it is sold in logs at the rate of 200 ducats the pound, to make articles of furniture for the courts. Being chipped and pounded, it is mixed with the fermented rice, and in that state distilled like the juniper in Holland. This wood is so hard, that the mountaineers of Hainan make spades of it to dig gold from their mines, which they barter with the people of the plains for such matters as they may stand in need of.

In the island of Tai-oun, or Formosa, situated in the Chinese sea, the inhabitants, particularly those on the coasts, manufacture rice-wine, and distil a spirit from it, much in the same manner as already described. But the people of the interior, who are less civilized, make their drink in a very different manner. Like their neighbours, they plant rice and live on the produce; but as they have no wine, or other strong liquor, they make in lieu of it another sort of beverage, which, if we may believe Georgius Candidius, a missionary, is very pleasant, and no less strong than other wine. This liquor is made by the women in the following manner:—They take a quantity of rice and boil it until it becomes soft, and then bruise it into a sort of paste. Afterwards they take rice flour, which they chew, and put with their saliva into a vessel by itself, till they have a good quantity of it. This they use instead of leaven or yeast, and mixing it among the rice paste, work it together like baker's dough. They then put the whole into a large vessel, and after having poured water upon it, let it stand in that state for two months. In the mean time, the liquor works up like new wine, and the longer it is preserved, the better it

becomes; and, as is said, will keep good for many years. It is an agreeable liquor, as clear as pure water at the top, but very muddy and thick towards the bottom. Though this residuum cannot be used as a beverage, it is too precious to be thrown away or lost; hence, to make it potable, it is sometimes diluted with water, but more frequently supped with a spoon, as a ragout or exhilarating pulp.

When the labourers go to work in the fields, they bring with them some of this thick or muddy substance in cane vessels, which they blend with fresh water, and after the mixture has stood a little time for clarification, it is taken as a refreshment during the heat and labour of the day.* The Formosans have another liquor, called *Masakhauw*, or *Machiko*, made from rice. A vessel, about the size of a hogshead, is nearly two-thirds filled with rice, chewed, and boiled; and then filled to the top with water. It is then luted and buried seven feet under ground, where it is suffered to remain for a year, when it is taken up and the liquor pressed from the grain by the hands. In about eight days, during which it works and settles, it becomes a clear, wholesome beverage, equal to the strongest wine, and will keep good for twenty or thirty years. Some of the wealthy inhabitants have 200 or 300 vessels of it at one time stored in their cellars. At the birth of a child, the parents prepare some vessels of this liquor, and preserve it till the time of marriage. They have another sort of drink called *Cuthay*, which is nothing more than the second washings of the pressed rice, made by putting a small quantity of it into a calabash containing about two gallons of water. It makes a cool, refreshing drink, having a slight flavour of the Masakhauw, bearing the same proportion to it in strength as small beer does to strong. In the northern parts, between Keylang and Tamsay and between Tamsay and Mount Gedult, a drink is made from *wood ashes*, of considerable strength, but injurious to Europeans, from its excoriating effects on the bowels, which usually lead to dangerous hemorrhage. Although these liquors are common as well as many others from China, yet the natives seldom indulge in them to any degree of excess.† The palm grows luxuriantly. Toddy is drawn from it, and the uses of the tree for the various purposes of life are known to many of the inhabitants. The leaves are sometimes formed into cylindrical caps with crowns, one above another, and surmounted with waving plumes, which give them a majestic appearance.

* Candidius's Account of the Island of Formosa, apud Churchill, vol. i. p. 405. Ogilby's Atlas Chinensis, Fol. Lond. 1671, p. 10.

† Ogilby's Atlas Chinensis, p. 22.

The products of this island are sugar, corn, rice, with most other grains, fruits, and vegetables, common to the continent of China. But, though fertilized and intersected by a great number of rivulets from the mountains, it is very extraordinary that every kind of water in the island is said to be a deadly poison to strangers, for which no remedy has hitherto been found.* This, however, can only apply to the water in its simple state, as by boiling, filtration, and other precautions, it may be rendered sufficiently safe for every purpose of life. Neither is it natural to suppose, that a place of such magnitude as Formosa would be unprovided by Providence in so essential an article as that of good water, without which neither man nor beast can exist. The climate is represented to be salubrious, the soil fertile, the animals vigorous and numerous; and the ox, a creature greatly dependant upon water, capable of exerting a strength and speed unknown in any other part of the world. This assertion, respecting the deleterious quality of the water, seems to be as preposterous as the story of John Struys, who would make us believe that he saw a man with a tail more than a foot in length, covered with red hair, and greatly resembling that of an ox; and that this deformity proceeded from the climate, and was peculiar to all the inhabitants of the southern parts of the island—a relation too extravagant and incredible to require refutation. Stripped of the marvellous, Formosa is a valuable acquisition to China; and were it not for the exactions of the Mandarins from those who emigrate to it, numerous manufactories would be established, and that island would rank high in commercial importance; since it is known, that immense quantities of rice are raised in the plains, and that to the amount of 100,000 bushels are annually exported from its harbours. The tribute imposed by the Chinese on the inhabitants is paid in grain, and the contributions of this article to the government stores are as respectable as many of those from the most fertile parts of the empire.

The Coreans, an ingenious and enterprising people who inhabit that extensive peninsula washed by the sea of Japan, and lying to the north-east of the Chinese territory, manufacture a species of wine, or vinous liquor, from a grain called paniz, (panicum or millet), or from a coarse kind of rice.† They distil arrack in the same manner as the Chinese. In this country there are numerous taverns, but no regular inns for the accommodation of travellers. In these houses,

* Grosier, vol. i. p. 227.

† Mod. Univ. Hist. vol. vii, p. 329. Malte-Brun, vol. ii. p. 498. P. Regis' Geog. Observ. in Du Halde, vol. ii. p. 376, &c.

music and dancing are kept up with the use of betel, tobacco, and drink in the style and manner of the Chinese, whose habits and customs they greatly imitate. Their subjection to the Chinese, and their consequent intercourse with that people have given to the Coreans a knowledge of almost all the liquors to be met with in China. The southern districts are very productive in wheat, millet, barley, rice, and a variety of fruits. The mountains are cultivated in many instances by terraces to the tops, and the hand of industry is visible in almost every part of the country. Traders from Corea go every year to Pekin with the ambassadors, and carry with them whatever articles of rarity they consider acceptable to their neighbours, and in return, bring home a supply of all the productions of the capital, among which the choicest wines form no inconsiderable portion.

Of this country it is to be regretted that so little is known. The voyage lately undertaken by Captain Lindsay, in the Amherst, at the instance of the president and committee of super-cargoes at Canton, gives us little more than a glimpse of the country, as the jealousy of the people prevents foreigners of free intercourse or even entrance into their towns and villages. Captain Lindsay was accompanied by the Rev. Mr. Gutzlaff, a zealous and pious missionary, and after several vain attempts to procure an interview with the king, for whom they had a letter with some presents, all they could effect was a meeting with some of the chiefs, who entertained them in a temporary shed, where they were served with some wine, or rather with a spirit resembling once-distilled whiskey. Of this the chiefs partook first, not through any incivility to the strangers, but as a national custom.*

Of Japan, as of the other distant and oriental nations, the early history is but little known. Marco Polo, in the third book of his account of eastern countries, imperfectly describes it under the name of Zipangri. The Portuguese, about the year 1542, were the first who laid open to Europeans a knowledge of those islands.† The inhabitants, though far advanced in civilisation, appeared altogether unacquainted with chemistry as a science. In the practice of several of the useful and ingenious arts they had made astonishing proficiency, and in the manufacture of *Sacki*, a strong and wholesome beer procured from rice, they were not excelled by any other people.‡ This

* Documents of a voyage to the North-East coast of China, in the Amherst, printed by order of Parliament, 1833.

† Kœmpfer's Introd. Hist. Japan, vol. i p. 32. Thunberg, &c.

‡ Kœmpfer, vol. i. p. 121.

liquor has been the favourite drink from the most remote ages; and it is related of one of their emperors that, taking precedent from the Chinese monarch Kya, he employed 2000 men to dig a large lake, and having filled it with *Sacki*, sailed over it in a stately barge. Captain Saris, while in Japan in 1613, met with several kinds of strong liquor; and when he delivered his presents to the emperor, amongst which was a large drinking cup of superior workmanship and value, the monarch proposed to drink, standing, the health of his Britannic majesty, in a cup of spirits distilled from rice and as strong as brandy, termed *Sotschio*. Having filled his goblet, containing about a pint and a-half, he drank it off, ordering his secretary or cup-bearer to see that every individual present had followed his example. *Sacki* is the beverage in general use.* It is as pure as wine, of an agreeable taste, and intoxicating if taken to any extent. When fresh, it is whitish, but if permitted to remain long in the cask, it becomes brown. Kœmpfer met with it in all the inns at which he stopped on his journey to the metropolis; and although no person whatever is exempt from brewing it, yet there are numbers in the empire who follow no other business than that of making sacki. It is manufactured to great perfection in the city of Osacca, and in such abundance that it is sent from thence all over the kingdom, and even exported to other countries by the Dutch and Chinese.† The term *Sacki* is said to be derived from the name of this city, being the genitive case of the word, omitting the initial letter. It is very probable that our wine called *sack* had its name from this Japanese liquor, as that term must have been introduced into Europe by the Spanish and Portuguese traders, by whom sack was first made and sent from Malaga, or the Canaries. This seems the more likely, as both those nations were early acquainted with Eastern countries, and the names by which they distinguished their favourite. The writers of the Universal History state that *Sacki* was first brewed in the city of Jenkinosari, in the year of the era 1347, answering to our A. D. 687; but this is at variance with the annals of the country, in which it is mentioned many years previous to that period.

The town of Muru, in the province of Bisen, is inhabited chiefly by the brewers of Sacki, and the quality of the liquor made there is said to be excellent. In 1825, the Dutch alone exported to the value of nearly 14,000 florins. This liquor, for the most part, bears a great resemblance to Canary wine, is sold in every tavern like our beer, and

* Titsingh's account of Japan, Ogilby's Atlas Japanensis. Folio, London, 1670.

† Kœmpfer, vol. ii. b. v. p. 426, 469, and 477.

is used by the wealthy at their ordinary meals.* The common mode of using it is by heating it in a kettle, and then pouring it into tea-cups made of lackered wood. At Batavia, sacki is drunk out of wine glasses before meals to excite an appetite, the white or purest kind being preferred on such occasions. Although Sacki is drunk freely by all descriptions of persons, from the emperor to the meanest subject, its immoderate use is seldom productive of much mischief. Some, indeed, of the lower orders have been known to be beheaded for being drunk and quarrelsome;† but this is of rare occurrence. The beer of Japan, as already remarked, is considered wholesome and pleasant to the taste, but it is of such a nature, that it should be taken not cold but moderately warm; for when it is not heated, it frequently occasions that dreadful and endemial species of colic, which the Japanese call *senki*, a disease which has proved fatal to many, as well foreigners as natives. To cure this distemper various means are used, but the principal is the *acupunctura*, or pricking of the abdomen with a needle, so as to let out the hidden, or morbific vapours. "I have been myself," says Kœmpfer, "several times an eye-witness, that in consequence of these three rows of holes, (for such are the number of punctures) made according to the rules of art, and to a reasonable depth, the pains of the colic have ceased almost in an instant, as if they had been charmed away."‡ Surgeons are usually furnished with drawings of the parts where it is proper to apply the needle. This instrument is generally made of gold or silver, and the operation seems to be a species of cupping as practised by the faculty in Europe.—Caron informs us that the higher orders are always entertained at visits with wine served out in varnished cups called *beakers*, and when a person happens to be overcome by drink he retires to sleep off his intoxication. Like wine and spirits in our own country, sacki is made a medium of social intercourse, and introduced not only on joyous but on solemn occasions, such as holydays, festivals, marriages, and funerals. The holydays are numerous, being two in every month, besides five great annual festivals which some devote to piety, but the greater number to amusement. These afford opportunities of great indulgence in the use of national beverages, and those days being considered unlucky and all business stopped, great liberty is taken, and few restraints are imposed either on the passions or the appetites. Drinking parties are never held in public

* Thunberg's Travels, vol. iv. p. 39, 40, 41.

† Kœmpfer, vol. ii. p. 567.

‡ Kœmpfer, vol. ii. b. v. p. 426, 469, and 477.

taverns in Japan, but always in private houses. The inns and taverns are numerous, but they are chiefly appropriated to travellers and strangers: hence there is seldom any public exhibition of intemperance or irregularity. To be drunk in the day time, is, according to Golownin, considered disgraceful; hence the lovers of drinking do not indulge their propensity until evening, after the termination of all labour and business. The Japanese are said to exceed most other nations in the magnificence of their entertainments and festivals. To these they invite not only their living but their dead relations and friends; the latter, by going in troops to their graves with burning lamps in their hands, calling them by their names, and entreating them to favour them with their presence. This is a superstitious but innocent weakness, which influences many of the oriental nations to pay respect to the memory of the departed by frequent and ceremonious visits to the city of the silent.

The following anecdote related by Titsingh, while it shews the partiality of the Japanese for their Sacki, gives an interesting specimen of their capabilities of sincere friendship, somewhat similar to the well-known affecting story of Damon and Pythias:—A certain prince, named Tchouya, having conspired against the ruling monarch, was condemned to death with some of his accomplices. At the moment of execution, a man carrying two gold-hilted sabres and covered with a flowing mantle, rushed through the crowd, and addressing himself to the commandant, said, "My name is Sibata-Zabrobe; I am the friend of Tchouya, and am come to embrace him, and to suffer with him." "You are a worthy man," replied the commandant, "it were to be wished that all the world were like you—I give you permission to speak to Tchouya." The two friends conversed together for some time. Sibata expressed the extreme pain he felt at his condemnation, and that he had come to Yeddo to share his fate, as he would be ashamed to survive him. He then took from the sleeve of his robe a small pot of sacki, and, after drinking it, the two friends bade farewell to each other. Tchouya was melted into tears; he thanked Sibata for his kind and courageous resolution, and declared that he was most happy in the opportunity of once more embracing him before he died. Sibata weeping, replied, "our body in this world resembles the flower *Asa-gawa*, which before sun-rise is beautiful and magnificent, but immediately after fades and dies; or like the *kogero* insect, that exists only for a day: but after death we shall be in a better world, where we shall enjoy each other's society without interruption." With these words he rose, thanked the commandant, and retired. The executioner had done his office,

and Tchouya with his fellow-sufferers lay prostrate on the scaffold. Sibata approached, and offering the commandant his two sabres, said, "To you I am indebted for the consolation of having conversed with my friend, taking a cup of *Sacki*, and bidding adieu to him before his removal to a better world; I entreat you to denounce me to the governor of Yeddo, that he may order me to suffer like my friend." "The gods forbid," replied the commandant, "were I to do what you desire, you would die like Tchouya; your courage deserves a better fate. While all his other friends are hiding themselves in dens and caverns, you have braved death to embrace him; such men as you are rare, and I could not betray them." The drinking of *Sacki* forms the last ceremony of those condemned to commit suicide, which is an established punishment for all offenders against the state. When the culprit receives the order for self-destruction he invites his friends to meet him on the day appointed, and regales them with sacki. Having drunk together for some time, till, perhaps, the spirits have become exhilarated, the victim takes leave of them, and the order of the court being read, he addresses the company in a farewell complimentary speech; then bending his head towards the mat, he draws his sabre, cuts himself across the belly, penetrating to the bowels, when one of his confidential servants, placed behind for the purpose, instantly strikes off his head. No disgrace is attached to this unnatural mode of punishment; on the contrary, the son inherits all the father's property and honours, and none but persons of the higher grade are privileged to be their own executioners.

Independent of *Sacki*, the Japanese have a variety of exhilarating liquors made from wheat, rice, and other grain, and from these they distil spirits to some extent. From the fruits of the country a very nice description of wine is produced. Kœmpfer, during his stay at Jeddo, tasted an excellent sort made from plumbs. They tap the palm, birch, and other trees, from the juice of which they manufacture various beverages with no inconsiderable skill.—The vine is planted merely as a curosity in the manner that we plant oranges and lemons; because the grapes do not readily ripen, and the people are so attached to sacki, that they rarely think of any more agreeable substitute. Grapes, however, according to Thunberg, are reared in such quantities as to form a portion of the dessert at the dinners of persons of rank.

Sacki, distilled from the flowers of *motherwort*, (a splendid odoriferous plant, supposed to be the *chrysanthemum Indicum*, or the *kiou-hoa* of the Chinese, and celebrated by all the poets of that country,) is a favourite drink at the court of the Dairi, being

considered to have the properties of prolonging life. These flowers, as soon as they open, are gathered; and it is usual to mix leaves and petals with boiled rice, from which a fermented beverage is prepared and used in celebrating one of their favourite festivals. The partiality for this drink is traced to the following traditionary legend:—From the sides of a hill near a village in the province of Nanyo-norekken, a stream of pure water was formed from the dews and rains that washed the luxuriant flowers of the motherwort with which this place abounded. This stream, in its passage through the valley, served the villagers for their ordinary drink, to the virtues of which the extraordinary longevity of the inhabitants was attributable, some living to the age of 100, others to 120, and 130, while a person dying at 70 was considered to have a premature demise.

It is also customary to drink sacki distilled from peach blossoms for the purpose of obtaining long life and good health, as the peach is supposed by them to possess the properties of repelling all kinds of infection. This practice originated in the following Chinese tale:—A female of exquisite beauty, said to be one of the immortals, having presented one of the emperors with a peach, he was so struck with its appearance, richness, and delicious odour, that he inquired where it was procured. She replied, it was the produce of a tree not of earthly growth, but came from one that bore fruit but once in 3000 years, and assured him that if he ate it, he would attain that age. From this superstitious fable, the Chinese and Japanese regale themselves with a beverage extracted from peach blossoms at the second of their great annual festivals.

The apparatus for distilling is here, as in other countries, in proportion to the extent in which the manufacture is carried on; and to such perfection have they brought the art of distillation, that individuals have been known to carry a portable still. Golownin saw one in the possession of a Japanese traveller, with which he made spirits from rice, drank freely of it himself and shared it liberally with others.* The ingenuity of these people in the mechanic arts is well known, and is nowhere more conspicuous than in the neatness and perfection to which they have arrived in the formation and elegance of the bowls and cups used for holding sacki. Many of them are so large as to admit of ornamental figures, some of which are so artfully contrived as to represent the actions of real life. Titsingh describes two of this kind, one representing a young lady, and the other a servant holding a parasol, which, when floating in a bowl of sacki, the servant

* Golownin's Captivity in Japan, vol. i. p. 273.

would open the parasol, and follow his mistress, who always took precedence.

The brewing vessels and stills in Japan are made of copper, a metal very abundant in the country. Those used in the making of sacki at the court of the Dairi, or spiritual prince, are only once employed for that purpose, so that on all occasions of brewing and distilling a new apparatus must be procured. In like manner, the culinary utensils, in which his meat is prepared, are changed, and the plates, dishes, bowls, and other table appointments, are broken after each repast.

Rice is the principal food, tea is the common beverage, and as all liquors are drunk warm, the kettle is seldom or never off the fire. There are no casks for liquids; but tubs that hold ten or twelve gallons. These are broader above than below, and are bound with wooden hoops, and have a small square hole at the top. The best *sacki*, as well as *sotschio* is kept in large glazed earthen jars, or lacquered and gilt flasks.

The early missionaries affirm that wine was common in Jesso and in the vicinity of Matsmai, and that it was drunk freely, yet, as before observed, grapes do not flourish in the country; those which are found are wild and tart, but are salted and eaten as a salad by the common people. The sugar-cane is reared, but not to any extent, and its produce is of a black colour. The principal supply is imported, and the neglect of its culture is owing to the scarcity of land and the ease with which it can be procured from the neighbouring countries. Thunberg says that no canes have been imported for cultivation; and that the Japanese shewed him the juice of a tree that grows on the adjoining islands, from which sugar was manufactured. This juice had a disagreeable appearance, and was of a brownish hue. According to this writer, the sugar-maple does not grow in Japan; it is, therefore, probable, that the juice alluded to was obtained from the birch, which abounds in various parts of the empire.*

Honey, though frequently found in Japan, is confined to medicinal purposes, mead being unknown. Many of the native fruits are preserved in *sacki*, the acid of the liquor imparting to them an agreeable flavour, highly prized by the people. It is common to see firkins of cucumbers, immersed in *sacki*, exposed for sale in the public markets, and to give a zest for drinking this favourite beverage, *dhulish*, from which sloak is made, is frequently eaten before and after meals.†

Cordials of the nicest quality are prepared by the Japanese, and

* Thunberg vol. iv. p. 93. † Golownin's Recollections of Japan, passim.

what are prized as luxuries in many places are with them quite familiar. Buck-wheat *(polygonum fagopyrum,)* is reared to great extent, and forms a portion of the food of the inhabitants. It is to be found at the inns and places of refreshment on the roads, in the form of cakes, and a pleasant beverage is brewed from it. But although the hop *(humulus lupulus,)* was observed by Thunberg to grow wild in the country, the people seemed altogether ignorant of its application to the purposes of brewing.* In the ceremonies of drinking, in presenting a cup to a friend, it is usual to make a slight bend of the body, and lifting the left hand to the forehead, first taste the spirits to show there is nothing in it injurious, and then hand it to the guest.

The passion for strong liquors among the Japanese is much the same as that of other orientalists ; and it is held by them as a maxim that "to drink seldom but heartily when at it, is better than to tipple frequently and in small quantities," an adage, however, little attended to, as many of them take it as often as they can conveniently procure it, and that without any restraint. It is a custom before dinner to drink to the health of the guests, which act is always accompanied with a profound bow. The women eat by themselves during the courses, they drink a glass of sacki, and repeat the draught occasionally. It has, notwithstanding, been said, that spirituous liquors are not used by the women, except on some extraordinary occasions, or on public festivals ;† but from the picture which Kœmpfer gives of a large portion of the Japanese females, I am disposed to think that they are not quite so abstemious. Thunberg asserts that sanctuaries for women of pleasure are very numerous, and commonly the handsomest houses, frequently situated in the vicinity of their idol temples. Such is the want of decency, that these places are indiscriminately resorted to by male parties as taverns for drinking *sacki.* Many of the Chinese repair to Japan to mingle in its debaucheries; hence it has been denominated the brothel of China, though at home, frailties of a similar description are not wanting to stigmatize the character of the Celestial Empire.

The trade with Japan has, for a series of years, been confined to the Dutch, who are allowed to send thither only two ships annually, so that we know little of the internal policy or commerce of this interesting empire, but what has been communicated through the medium of writers, who, it may be feared, would not disclose what might be prejudicial to the monopoly of their countrymen. Since the year 1601, when the Dutch were first permitted to trade there,

* Thunberg, vol. iv. p. 85. † Mod. Univ. Hist. vol. vii. p. 376.

those islands may be said to be shut up from every other nation; and we are taught to believe that every precaution is observed, with which jealousy can inspire ingenuity, to keep foreigners from their shores, and to prevent them from acquiring their language. Were an embassy sent from Great Britain to Japan, it is not improbable but that it would be followed by favourable results, and an immense trade opened for the enterprise of English speculators. That the Japanese are not averse to an intercourse with British merchants, is evident from the circumstance that during the late war several of our vessels were received at Nangasaki as Dutch ships, although the people were well aware that they were English, but they could not acknowledge them under any other flag than that of the Dutch. This opinion of their favourable disposition towards the British is confirmed by the fact of a ship from Bengal having got on their coast, to which the natives repaired in great numbers to purchase such articles of British manufacture as they could procure. Even the government officers, who had boarded the vessel for the purpose of directing the captain to leave the country, shewed an anxiety to purchase cloth such as that worn by him. When he said he had none, they desired him to be sure to bring articles of that kind on his return; adding ironically, "But on no account was he to come back."

When the Portuguese were in possession of the trade of this country, the export in gold alone, according to Kœmpfer, amounted to 300 tons annually, making the enormous sum of £2,500,000 sterling. In exchange for this, the articles were various, and among these, wines formed no inconsiderable share.

There can be no doubt that were judicious efforts made to promulgate a true knowledge of Christian principles among a people so shrewd and intelligent as the Japanese, free intercourse would be the result, and the prejudices of paganism would fade away before the superior light of the gospel.

Between the island of Kinsire, the most southerly of that group which forms the empire of Japan, and Formosa, are situated the Loo-Choo islands, which have lately attracted considerable attention from the interesting accounts given of them by Dr. M'Leod and Captain Hall of the Alceste and Lyra. The inhabitants are represented by these gentlemen as possessing most amiable dispositions, and enjoying all the comforts of a land rich in every beauty which nature can bestow. The orange, the lime, the tea-plant, and sugar-cane abound, while rice, wheat, peas, melons, pine-apples, &c. are reared in great plenty. *Samtchoo* is distilled by them to considerable perfection, and is made much in the same manner as in China. Beechey speaks of a

drink called *Mooroofacoo*, a dark-coloured cordial, possessing a bitter sweet taste, but inferior in strength to *samtchoo*. At a repast witnessed by this navigator, the company were closely plied with *samtchoo*, or, as it is sometimes here called, *sackee*, in small opaque wine-glasses which held about a thimble-full: the example set by the host was followed by the guests, each turning down his glass when empty. This spirit is very ardent, and hence the propriety of using such small glasses; but the *Mooroofacoo*, which was distilled from grain was drunk out of a small enamelled cup.* Of the samtchoo, or spirit made from rice, nine jars, each containing about fifteen gallons, were sent on board the Alceste and Lyra during their stay at Loo-choo. *Sacki* is in use, and of a good quality, little inferior to that of Japan; besides which they have a liqueur named *Chazzi*, which resembles rosolio, and is of a strong intoxicating quality.†

Gutzlaff, in his late visit to these islands, tasted some of their spirituous liquors, which he says were very clear and of excellent flavour. Among the articles of export from Loo-choo, samtchoo spirits form a portion, and are sent to Japan and China,‡ where they meet a ready market.

It is customary with the inhabitants of these islands, as with the people of China, to have games for the encouragement of drinking and social intercourse. One of these consists in holding the stalk of a tobacco pipe over the head, in which position the individual, by the motion of his hands, turns it quickly round. And when he stops twirling it in this way, whatever person in company the open bowl of the pipe points towards, must drink a cup of wine. Another game is that of forfeits by the fingers, which subjects the performer or his opponent to drink a cup of wine, should either be unsuccessful in calling the number extended by the sudden opening of the hand. It is not a little remarkable, that a similar game, termed Mora, is practised in the South of Europe, where it is generally played to determine who shall pay the reckoning.

This game is said to have been known to the ancients, and would imply an early intercourse with Eastern nations.

In some of the adjacent islands, they make a strong drink from the remainder of their crops of corn, rice, pulse, &c. called *Awamuri*.§ On the island of Jesso, although the people are but little advanced

* Beechey's Voyage, vol. ii. p. 473–4.

† M'Leod's Voyage to China and Loo-Choo, 8vo. p. 78.

‡ Beechey's Voyage, vol. ii. p. 198.

§ Mod. Univ. Hist. vol. vii. p. 993.

beyond the state of hunters and fishers, they make a kind of wine resembling *sacki*, which is very strong. This they drink in great quantities, although they are seldom intoxicated; a circumstance ascribed by Father de Angeles, a Jesuit, to their use of the *todo-noovo*, a kind of oil drawn from a fish of the same name, with which they season their rice, and almost all eatables.* This fish, sometimes spelt *todo-noevo*, a species of seal, is described as a small fish covered with hair, having four feet like a hog's; its oil is said to be an infallible preventive of inebriety. There seems nothing extraordinary in the effect attributed to this oil, since it is common in our own country to have recourse to melted butter to recover persons labouring under excessive intoxication. Ovalle, in his History of Chili, mentions a similar effect to that produced by the *todo-noovo*, from the use of certain star-fish caught on the coasts. These, when reduced to a powder and mixed with wine, have the effect of making the individual who drinks it abhor wine as much as he before loved it. Another singular remedy for drunkenness mentioned by Ovalle, is that of drinking the sweat of a horse infused in wine, which ever after causes an utter dislike for that liquor. In many parts of Jesso, wild grapes are abundant, while millet and other grain are plentiful, but the chief beverages drawn from these are manufactured by the Japanese settlers, who have imparted to the Aborigines a taste for those luxuries.

The islands lying near Jesso and Kamtschatka are commonly called the Kuriles; several of these, such as Kunashir, Exetooroop, and Saghalien may be considered Japanese colonies, and have their chief supplies of rice, tobacco, sacki, and other luxuries, from the mother country. The Kurilians are warmly attached to tobacco and strong liquors; the former, often moistened by sacki, is sold by them without restriction, but the latter only to a limited extent, lest excess in their use might lead to the dangerous consequences of sickness, discord, or criminal indiscretions.

In casting our eyes over the broad expanse of the Pacific Ocean, we are presented with so many states and islands, that to describe all would be superfluous; and as they greatly resemble each other in the productions of the soil, it may be sufficient to give a general idea of the most considerable. The Mariana isles, about twelve in number, were first discovered by Magellan, who had reason to form so unfavourable an opinion of the inhabitants, that he bestowed on them the name of Ladrones, or *island of thieves*, in memory of the repeated

* De Angeles apud Charlevoix. Hist. Japan. Mod. Univ. Hist. vol. vii. p. 442.

thefts which he experienced. The people were found to be extremely rude and ignorant, but subsequent navigators have represented them in a more favourable point of view. Wallis, in 1767, remained upon Tinian a month, and seemed pleased with the refreshment he procured. The people speak a language bearing so close a resemblance to that of the Philippine islanders that they are supposed to have sprung from one common stock ; the productions are much the same, and they closely resemble each other in many respects. Since the establishment of the Dutch in Guam, one of the principal settlements of this group, the inhabitants have become better acquainted with the enlivening qualities of the cocoa-nut tree, and of the rice cultivated at Rota. In the island of Guam, a liquor called *Touba* is in use, of which the natives seem to be extremely fond. De Pages represents the brandy made from the fermented juice of the cocoa-tree as excellent.* The Manilla ships usually touch at these islands for refreshments in their voyage from Acapuleo. The Carolines, a cluster of islands which lie to the south of the Ladrones, are but little known. They are said to resemble the latter, both as to the natural productions and the manners of the people. Captain Wilson, whose ship was wrecked in 1783 upon the coast of Pelew, one of the principal of the group of islands of that name, gives a pleasing picture of the inhabitants. The island is stocked with a great variety of plants and with trees of various kinds ; among these may be reckoned the cabbage-tree, the bread-fruit, and a tree producing a fruit like an almond. Plaintains, bananas, oranges, and lemons are found. The leaves of the palm serve as thatch for their houses, the milk of the cocoa supplies them with drink. A kind of sherbet is made, to which the juice of the orange is added. It is remarkable that the crews of the ships which were sent from Bombay to these islands, in 1790, among the other supplies, introduced liquors to the notice of the inhabitants, who thus acquired a taste for the luxurious drinks of their more enlightened visitants. Captain M'Clure, who commanded the ships, remained on this island, resolved to pass the remainder of his life among these ingenious and virtuous people.—Of New Britain and New Ireland we know little, but such parts of them as have been explored are considered abundantly fertile. The cocoa and different kinds of palm trees flourish in the forests, while numbers of esculent roots and vegetables are met with in the plains and valleys. The natives are said to be unacquainted with the juice of the palm. The Solomon islands seem to be as little known as the two just mentioned,

* Travels round the World, vol. i. p. 171.

writers being divided as to their number and extent. Alvaro de Mendana, the Spanish navigator who discovered them in 1567, gives a description of their inhabitants, little different from that applicable to other islanders in the Pacific, their arts and habits being much the same. When Cook visited the islands of the New Hebrides in 1773, about sixteen in number, he found them well wooded and stocked in abundance with sugar-canes and yams. The plantain, cocoa, banana, bread-fruit, figs, oranges, and other fruits, appeared, though not so abundant as in some of the other islands of this occean, but from the fertility of the soil, they might be augmented with very little labour to a supply sufficient for any exigence. Vegetables grow in great profusion, and where the hills are covered with trees to the top, the juice and intoxicating effects of the palm, or other material, we may reasonably conclude, are not unknown.

Among the Friendly, Society, Feejee, Sandwich, and Navigators' islands, the *Cava* is in general used as a beverage. The best description that has been given of it is by Mariner, who resided in the Friendly Islands for many years, and was familiar with all their manners and customs.* The cava plant, partly described under the appellation of *ava* in the article on Borneo, is a species of pepper cultivated solely for the purpose to which it is applied. It seldom exceeds five feet, and has large leaves shaped like a heart with jointed stalks. The root is carefully dug up, scraped clean with muscle-shells, and split into small pieces. It is then distributed among the people, seated in two circles, to be chewed. The deadly silence which had previously prevailed is then broken by the cry of "*my ma cava ; my ma cava ; my he cava*," give me some *cava*, give me *cava*, some *cava*, by each of those who intend to chew it. No one attempts to chew it but young persons with good teeth, clean mouths, and free from disease. Women often assist, and it is curious that in the process of chewing, the root is kept wonderfully dry. In some places, says Kotzebue, the old women only chew the root, and the young women merely spit on it to thin the paste. The chewing of each mouthful occupies about two minutes, and when thus masticated, it is placed on a piece of plantain or banana leaf, and handed to persons appointed to collect and place it in a wooden bowl of about three feet in diameter and one foot in depth. In this vessel it is arranged in distinct and separate portions, in order to give an idea of the quantity of drink that it will make, to ascertain which it is shewn to the chief,

* He was one of the crew of a vessel that was seized by the natives in the year 1806.

who, if he considers that it will produce enough, gives orders for its preparation, or directs an additional quantity to be chewed. Two men, whose business it is to mix the material in the bowl, sit opposite to each other with the bowl between them, one of whom fans off the flies with a large leaf, while the other pours in water from cocoa-nut shells. Then, with his hands carefully washed, he intermingles and compresses the chewed matter; water contriving to be poured in until it is deemed necessary to stop. Having gathered all the ingredients equally and firmly together, a large quantity of the fibrous substance is thrown over the entire surface of the infusion, after which the man who manages the process commences the most difficult part of the operation. By various, curious, and singular evolutions of his hands and arms, he succeeds in working the fibrous subject round the pulp, till it encircled by it in a roll, as if screwed in a net. The mass is then taken out of the fluid, and raising it breast high, is twisted more firmly by other surprising and graceful motions of the arms, the muscles swelling and playing all the time in an extraordinary manner. Great strength is exerted on these occasions, and the dexterity with which the whole is accomplished never fails to excite admiration from all present. "Every tongue," says Mariner, "is mute and every eye is upon him, watching each motion of his arms, as they describe the various curvilinear turns, essential to the success of the operation." Three times the fibrous substance is thrown on the surface of the fluid, and the same operation each time repeated, in order to collect all the dregs from the liquor, and the roll is twisted and suspended over the bowl till not a single drop will exude from the substance. In the mean time, some are distributing provisions, consisting of yams, ripe bananas, or plantains, to be eaten with the cava, while others are busy making cups of leaves of the banana tree. These leaves, having been cut into lengths of about nine inches square, are folded in a particular manner, and secured with a fibre of the stem, so as to form a cup not undeserving of praise and imitation. In other islands, the drinking cups are made of the cocoa-nut, rendered transparent, sometimes curiously carved, but generally plain and of a yellow colour. The *cava* being strained and clear, a ball of the fibrous matter already mentioned, which acts like a sponge, is then dipped into the fluid, and squeezed out into the cups which are alternately held over the centre of the bowl, giving to each about the third of a pint. The cups are distributed with great regularity according to the rank or station of the individual, whose name having been announced, he claps his hands to shew in what part of the circle he is seated. If he be a chief, the bearer presents the

cup kneeling, but to every other person it is presented standing. On one occasion, where Cook was present at a funeral ceremony, a bowl of this drink, containing about a gallon, was prepared; the first cup, (which was formed of a plantain leaf,) being presented to the king, he ordered it to be given to another person, the second he drank himself, and the third was handed to Captain Cook; cups were then given to the other persons present, until the liquor was exhausted. Each cup, as it was emptied, was thrown upon the ground, whence it was taken up and carried to be filled again. Scarcely a word was uttered during the whole of this drinking bout; but the utmost gravity was observed by all, from the king to the meanest person present. On those habituated to the use of *cava*, it has no great effect, but on strangers it operates like spirits, occasioning intoxication, or a stupefaction like opium, that deprives its votary of appetite, and renders him averse to every kind of noise. From the ease with which it is procured, it may be considered as a common beverage; and there is no feast, nor ceremony, however trifling, without *cava*. The term *cava*, or *ava*, is applied to every thing of a heating or pungent nature, whether relating to ardent liquors or spices. At Otaheite, the *cava* root is for the most part bruised, instead of being chewed before the infusion; and the leaves are also used in the same manner. This root, or drink, is known in the Feejee islands by the name of Angona, and in most of the neighbouring islands it is denominated *ava*, or *uva*. The common drink among the South-Sea islanders is water, or the milk of the cocoa-nut; cava being only their morning beverage, or that which is used at feasts, or on occasions of ceremony. It is taken to excess in many places; and its pernicious effects have been observed by several navigators. Captain King saw a man who had drunk of it to such excess, that he became delirious and convulsed. While in this situation, he was held by two men, who busied themselves in plucking out his hair by the roots as a sovereign restorative.* Its frequent use has a tendency to emaciate the body, as testified by Captain King, who, after an absence of some time, was surprised to find, on his return, many of those who had been corpulent, in a short period reduced to mere skeletons by the inordinate use of this liquor. When a man first gives himself up to drinking *ava*, he breaks out in scales about the head, while the eyes become sore and red. The infection spreads gradually downwards over the body, till it is entirely covered with a scale, or scurf, resembling a scurvy. These scales gradually drop off, leaving the skin beautifully clear and smooth, and the body

* Cook's Voyage, vol. i. p. 350.

free of all disease. It is said to be a cure for the venereal; but from the women not being permitted to use it, the baneful infection brought to those islands by Captain Cook's vessel still remains to pollute and punish the inhabitants. The latest accounts respecting this drink are given by Captain Beechy, in his voyage to the Pacific and Beering's Straits, who relates, that a course of it is most beneficial in renovating constitutions worn out by hard living and long residence in warm climates. He gives an instance of a gentleman who had undergone a course of it to cure a cutaneous disease, similar to St. Anthony's fire: he took twice a day, half-a-pint, one before breakfast, and the other before dinner, and at the end of six weeks there was a visible amendment; the skin was freed of scrofula, and the whole system was improved.* Spirituous liquors are in great repute amongst the chiefs, one of whom thinks nothing of swallowing a tumbler of rum at a draught. Women of the higher classes are, if possible, the greatest drunkards. Dillon, in his narrative of a voyage for the discovery of the fate of La Perouse, confirms this by a circumstance which occurred at New Zealand; proving, that no rank nor condition amongst them is free from its influence. The high priestess, a woman regarded by her country as more than mortal, came on board the vessel to make some inquiries, and being invited into the cabin, she seated herself without embarrassment, and after remarking that the day was cold, demanded if there were any rum on board, and if so, requested that some might be given to her. A full decanter being placed before her, she filled a tumbler nearly to the brim, and quaffed it to the bottom without hesitation.† The missionaries have succeeded, in a great measure, in putting down the use of *ava*, this drink benig no longer allowed to be prepared, nor the root allowed to be cultivated; but unfortunately, its place has been partially supplied by the introduction of wine and brandy. Kotzebue, however, who lately visited those islands, says he never saw a drunken person during his stay.

The intercourse, which these children of nature have lately had with the civilized world, has put them in possession of different arts, of which they were before ignorant, amongst the rest, distillation to a certain extent.

In the Marquèsas Islands, the aborigines use not only *ava*, but procure a strong liquor from the root of ginger, for the purpose of enjoyment, forgetting care, and sinking into profound sleep. In

* Beechy's Voyage to the Pacific and Beering's Straits, vol. ii. p. 434.

† Dillon's Voyage, vol. i. p. 228.

Santa Christina, one of those islands, the sugar-cane was observed to grow spontaneously to the height of six or seven feet, but the natives were unacquainted with its properties and the uses to which it could be converted. The cocoas, with the bread-fruit, are the chief food of the inhabitants. Here also is found a kind of nut, called *ahi*, as well as the *Ti* root, which, when baked under ashes, is an agreeable and wholesome article of subsistence.* The inhabitants are so hospitable, that they not only freely share their liquors with their guests, but they consider it an act of kindness to give their friends food already chewed, that they may have only the trouble of swallowing it.

In the Sandwich Islands, an excellent spirit is distilled from the Tee root, *Dracæna*, resembling the *Dracæna terminalis*, something like the beet of this country, and which is found growing wild about the mountains and valleys. The leaves of this plant, which are broad and oblong, are woven into a sort of cloak by the mountain inhabitants, resembling that made from the palm leaves as used in various parts of the East. The stalk is used like the olive as a symbol of peace, and of this plant the Otaheitans reckon six species; three with red and three with white flowers. In the Pitcairn and the other adjacent islands, the Tee plant is extensively cultivated. Its leaves are the common food of hogs and goats, and serve the natives for wrappers in their cooking. The root affords a very saccharine juice resembling molasses, which is obtained by baking it in the ground. The plant requires two or three years to arrive at maturity. It is then about $2\frac{1}{2}$ inches in diameter. It is long, fusiform, and beset with fibres. From the root a tea is made, which, when flavoured with ginger, is not unpleasant. The root of the plant is larger and much sweeter than that of the beet; it is of a brownish appearance, and is in perfection all the year round. When the natives collect a quantity of this root, they bake it well under ground; when sufficiently baked, they pound it up in an old canoe kept for that purpose, mixing water with it, and leaving it to ferment for several days. Their stills are formed out of iron pots, which they procure from ships that call there. These they can enlarge to any size, by fixing calabashes or gourds with the bottom cut off, and made to fit close on the pot, cemented well with a sort of clay called *peroo*, a copper cone is also affixed, with which an old gun-barrel is connected, and passes through a calabash of cold water which condenses the spirit. The stills are commonly placed by a stream of water; they take the water

* Roquefeuil's Voyage Round the World.

when warm out of the cooler, and replace it with cold, by which simple process a spirit is produced, not unlike whiskey, only not so strong. This spirit is called by the natives *Y-wer-à*, which signifies warm water, or *luma*, in the imitation of the word rum. A man named William Stephenson was the first who introduced distilling. He was a convict who had escaped from New South Wales, and lived on the island, for many years. The credit of first discovering this mode of distilling has been claimed by a person named Young; but as it has been justly observed, neither of them deserves much praise for the introduction. Manning, who left Nootka Sound on the North-west coast of America, at the time when the Spaniards formed an establishment at that place, has cultivated the grape and peach on the island of Woahoo, one of the most important of the Sandwich group, from the former he makes very good wine, and from the latter good peach brandy.* Arago says,† that Francis Marini, a Spaniard, was the introducer of the vine into the Sandwich Islands; and Captain Lord Byron, who visited those islands in 1824, 1825, and 1826,‡ attributed the introduction of the vine to the same person, and expressed his approbation of some of the native wine. These islands appear well adapted for the cultivation of the vine, provided that the situations for the plantations be well chosen. Notwithstanding that grapes are partially planted, and wine produced from them, the prevailing drink is *ava*, which most take for the love of it, while others drink it to prevent corpulency. Kotzebue,§ one of the latest circumnavigators, says that although *ava* has been represented as tending to shorten life, particularly of those who use it freely, he met several of its votaries in a very advanced stage of life. The chiefs claim the drinking of it as their exclusive privilege, every one freely partakes of it, but not until after he attains a certain age. Kotzebue saw the son of a chief, a boy of ten years old, who boasted of having obtained the right of drinking *ava*, and shewed, with much pride, a spot on his loins where the irruption was already visible. The king Tameamea II. was so addicted to drunkenness, that he would empty a bottle of rum at a draught, a taste which unhappily tended to retard the civilisation of his subjects. In Hanaruro, one of those islands, runaway sailors have erected taverns, and have held out every inducement to profligacy in drinking, by the introduction of gaming and other amusements.

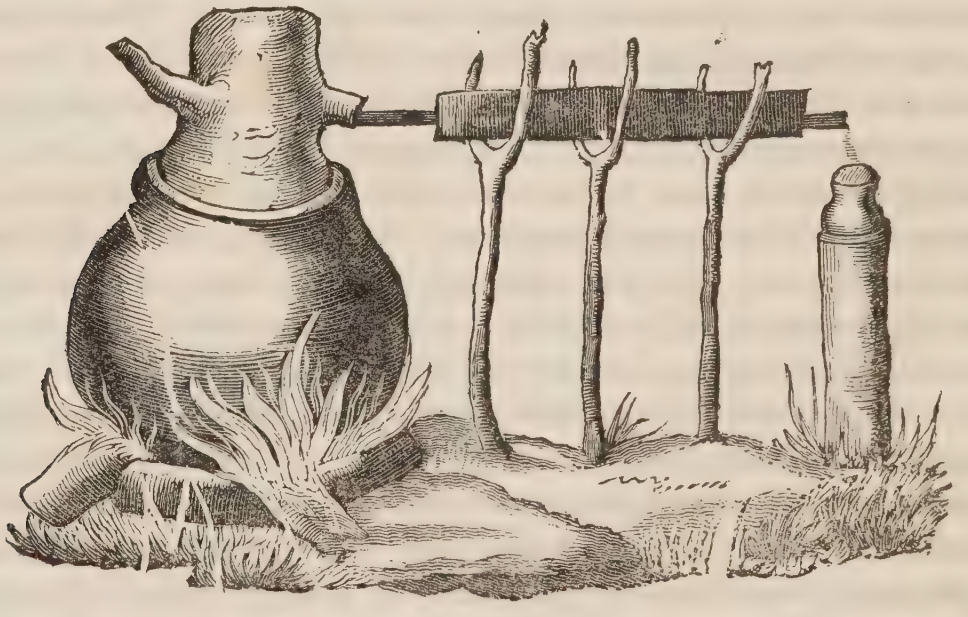
* Vide Literary Gazette, November, 1821.

† Arago's Voyage Round the World, 4to. p. 193.

‡ Voyage to the Sandwich Islands.

§ Kotzebue's New Voyage Round the World in 1823–4–5 and 6, vol. ii. p. 170.

At Eimeo, one of the Georgian Islands, a group to the east of the Friendly Islands, when visited by Mr. Ellis, intemperance prevailed to a great extent; and he found that they were in possession of the art of distillation from the *Ti* or *Tee* root (*dracæna terminalis*), which art had been introduced some years previous to the Sandwich islanders. Here as in other of the Polynesian islands, whole districts congregate to erect a public still, the apparatus of which, though rude, answers the purpose intended. The body of this still consists of a large stone, hollowed in the form of a pot, and placed on stones with space beneath for a fire; and on the top of this pot is placed a hollowed trunk of a tree by way of a head, in which is inserted a long cane of bamboo, conducted through a trough filled with cold water serving as a condenser. Into this still the fermented *Ti* root, previously macerated in water, is thrown, and the spirit runs into a calabash, cocoa-nut, or other vessel used for the purpose. Annexed is a representation of a still of this description used in Tahite, the largest of the Georgian Islands.



The process is conducted in a temporary shed erected on the occasion; and here the men and boys of the district are anxiously awaiting the produce. The first draught of the spirits, or *ava*, is given to the chief, and which is denominated *ao*, the remainder is distributed among the people who continue at the still for several days, or till all the materials are exhausted, during which horrible excesses are committed. At the preparation and work of these stills, the people are insensible to every other pursuit, and often appear, in the course of the revelry, more like demons than human beings. Sometimes in

a deserted still-house might be seen the fragments of the rude boiler, and the other appendages of the still, scattered in confusion on the ground, and among the dead and mangled bodies of those who had been murdered with axes or billets of wood in the quarrels that had terminated their dissipation.*

It is consoling to the friends of humanity to find, that since the introduction of Christianity into the South Sea islands, intoxication has become less frequent, and the stills have shared the fate of many of their idols, having been either broken or hidden under ground. As the sugar-cane abounds in most of the islands in the Pacific Ocean, the distillation of rum might become an article of traffic; but to the use of this liquor the chiefs of the Society Islands are opposed; and their attachment to Christianity has led them to consider the use of spirituous liquors as the greatest curse with which they could be inflicted. So destructive were the effects of intoxication in the Georgian and other islands, that in many places the country was nearly depopulated; for people living on such low vegetable diet could not bear the stimulus and violence which ardent spirits give to the constitution. Even so prevalent was its baneful influence, that the priests, before going to the temples to sacrifice to their gods, among which sacrifices infanticide formed no small portion, intoxicated themselves to render their feelings callous.

Of late, drunkenness has become so hateful, that in a code of laws established at Huahine, one of the Society Islands, the following enactment forms the twentieth article, the bearing of which would do honour to any nation:—"If a man drink spirits till he becomes intoxicated (the literal rendering would be poisoned), and is then troublesome or mischievous, the magistrates shall cause him to be bound or confined; and, when the effects of the drink have subsided, shall admonish him not to offend again. But if he be obstinate in drinking spirits, and when intoxicated become mischievous, let him be brought before the magistrates and sentenced to labour, such as road-making, five fathoms in length, and two in breadth. If not punished by this, a plantation fence, fifty fathoms long. If it be a woman that is guilty of the crime, she shall plait two large mats, one for the king, and the other for the governor of the district, or make four *hibiscus* mats, two for the king and two for the governor, or forty fathoms of native cloth, twenty for the king and twenty for the governor."†

* Ellis's Polynesian Researches, vol. i. p. 231.

† Ibid. vol. ii. 433.

Many islands in the Pacific Ocean produce wheat, rice, Indian corn, and every description of fruit peculiar to the West Indies. In Otaheite, the sugar-cane grows so luxuriantly, that from two small enclosures five tons of white sugar are annually manufactured.

With a great number of the islands classed by modern geographers under the head of Polynesia and Australasia, our acquaintance is very limited and comparatively superficial. Previous to the residence of the missionaries in New Zealand, the inhabitants are said to have been so ignorant as not to know the simple process of preparing food by boiling; and that differing from the tastes of men in other regions, they abhorred all kinds of intoxicating liquors. Unfortunately, however, the crews of the Southern whalers have made these people familiar with the use of rum, brandy, and other inebriating beverages, and the pumpkin is now cultivated for drinking vessels.

The natives of New Holland were represented as equally unaccustomed to the use of any kind of spirits; but the colonization of that country and the number transported thither, have completely altered their habits, and given them a thirst for the vice of intoxication. Reid, who some time since visited the colony, remarked that one could scarcely pass through the streets of Sydney without meeting them in a state of inebriety.* This indiscriminate censure is, however, really applicable to such alone as were permitted to amuse themselves for a certain time in the week, a liberty that was found to be grossly abused, and which is now mostly restricted, if not altogether abolished, by the governor.†

The policy of licensing stills has hitherto been discountenanced by the government; but from the rapid progress of agriculture, nothing, it is conceived, would tend more to the relief of the industrious than the adoption of such a measure. It has been strongly urged by the landholders, merchants, and other respectable inhabitants of the colony, in a petition to the British cabinet, dated the 11th February, 1819.

The advantages attendant on a permission to distil are forcibly illustrated by Wentworth, in a short review of the actual loss which the colonists have sustained from the want of it during the last fifteen years. This loss he calculates to be not less than £250,000, a sum which, had it been applied to the immediate encouragement of agriculture, would have imparted life and vigour into the whole community. Allowing the colony, says that writer, to require 60,000 gallons of

* Reid's Voyage to New South Wales and Van Diemen's Land, 8vo. p. 266.

† Parliamentary Report on the State of the Colony of New South Wales, 1832, p. 30.

spirits annually, 20,000 bushels of grain would be expended in distillation, the whole of which, when necessity required, might be turned into the ordinary course of consumption, and directed to the purposes of subsistence.*

That the erection of distilleries would be much to the advantage of New South Wales, there can, from the improved state of that settlement, be no manner of doubt, and I see little more evil to be dreaded from the domestic than from the foreign manufacture. The import duty on spirits is ten shillings per gallon, while on wine it rates only at nine pence. If spirits be abundant at this high rate of duty, why need they be more so under a proper system of restriction and taxation, although made within the boundaries of the colony? The adoption of such a measure would not only improve the revenue, but offer a sure and ready market to the farmer, as an encouragement for a great portion of his labour and industry.

The manufacture of peach brandy, which is chiefly confined to the Americans, might be successfully carried on by the people of New South Wales, since the peaches grow in such abundance throughout the colony, that the inhabitants employ them for no other purpose than that of feeding pigs. This useful fruit appears to thrive in every situation, as well on the most barren, as on the most fruitful soil. Barley, rye, wheat, and oats grow in great perfection.

In the woods of New South Wales, wild honey is to be had in abundance; the natives are very fond of it, and in traversing woods their eyes are continually cast up towards the trees in search of it, or in watching the direction in which the bees fly when proceeding to their retreat, and by these means their hives are easily discovered. Bees generally fly in a right line when returning home, and, on this principle, the Americans have invented several plans of ascertaining the position of their nests. One of these is, that of procuring two bees and marking their bodies by some white substance; then two persons, having each one of these, remove to some distance, and permitting them to escape at the same instant, and observing the line of their direction, they easily determine where their cells are situated. Some reckon the honey of New South Wales superior to European honey; the bee which makes it is very small, has no sting, and is rather longer and more slender than a common fly, but very much resembles it in other respects. The bees usually build at the joint of a high branch to which the natives ascend by cutting notches in the

* Wentworth's Statist. Hist. and Political Description of New South Wales, 8vo, pp. 114, 253, and 259.

trunk. Mead, however, has not been manufactured, as the natives are ignorant of this beverage, but, as English bees have been lately introduced, this liquor may soon become familiar.*

The spirits with which the colony is supplied are principally furnished by merchants in India. At first, no person could trade in this article to the settlement without a license; but the restriction was abolished a few years ago, and permission given for any one to supply it with this commodity, in consequence of which a considerable quantity was sent thither in 1822. The spirits imported from 1831 to 1832 amounted to 352,549 gallons, and the imports of wine for the same period to 104,406 gallons. The quantity of spirits exported was 29,256; and of wine 37,548 gallons. During this time, 11,000 gallons of gin were distilled in the colony of which none were exported. There consequently remained 334,283 gallons of spirits, and 66,858 gallons of wine.

By an act of 3d Geo. IV. c. 96, distillation was permitted in this colony, and regulations for conducting it issued by the governor, and published in the Sydney Gazette on the 3d of February, 1821. Liberty was given to commence on the 1st August, 1822. By these regulations, it appears that no still of less capacity than forty-four gallons is to be licensed, and that no grain whatever shall be distilled but that grown in the colony. The governor has the power of suspending distillation, when the price of wheat in the Sydney market shall exceed 10s. per bushel for two successive days; but in that case distillation from fruit will be permitted. The spirit is required to be of a strength of at least seven per cent. above hydrometer proof, and a duty of 2s. 6d. per gallon is to be paid for as much spirit of that strength as every still shall be found capable of producing from the number of charges that can be worked off in the space of 28 days.

The system of charging the duty on working against time, as practised in Ireland, was adopted as better calculated for the security of the revenue, in a colony possessing such imperfect means for its collection, than any mode of survey by officers. The form and dimensions of stills were fixed in proportion to the diameter and altitude;† but whether the extension of the plan under which the distilleries of the united kingdom are conducted at present, namely, that of working according to the gravity of the worts and the spirits drawn therefrom, under the regulations of the 4th Geo. IV. c. 81, should be extended to this settlement, is a matter of serious consideration for the legislature, inasmuch as they are better calculated than

* Breton's Excursions in New South Wales, &c. 8vo. p. 277.

† See the description of these proportions in the article on Ireland.

any other to prevent fraud and dereliction of principle, on the part of those engaged in so important a branch of trade.

To prevent the sale of spirits in small quantities from the distilleries, it is provided that no person who shall be a partner, or have an interest in a licensed distillery, shall have a license to retail spirits, and no licensed distiller is permitted to sell at any time a smaller quantity of spirits than 100 gallons.

Great care has been taken to prevent a monopoly, and, to avoid the expense and inconvenience of carrying grain to *particular markets*, stills are allowed to be set up in any part of the colony. By recent accounts from this settlement, it appears that at Sydney there is now a number of breweries dispersed about the town, and at about a mile distant an extensive new distillery, named the *Brisbane*, which produces a good spirit from native grain, and also cordials of excellent quality. In a different direction of the town, there is another establishment of the same kind, not less respectable. Those concerns furnish annually several hundred thousand gallons of a pure spirit from barley and maize, while 8,000 hogsheads are the yearly average of ale and beer supplied to the colony by thirteen breweries, the produce of various descriptions of native grain. In the Sydney Monitor of the 27th April, 1833, a gentleman who opened an extensive malthouse and brewery at Windsor, proposed to supply the neighbourhood with beer and ale equal to those of Edinburgh, while other accounts shew the increase and efficiency of similar concerns. It is a great encouragement to brewers, that the hop-plant thrives well there.

It may be worth recording, that a Mr. Squires was the first brewer in New South Wales, and his beer was of so good a quality, that to commemorate its worth and the value of the manufacturer, the following doggerel couplet was placed on the tomb of one of its votaries buried in the church-yard of Paramatta, now called Rosehill:—

Ye who wish to be here
Drink Squires's beer.

The duty on spirits distilled in the colony, as before stated, is 2*s.* 6*d.* per gallon from grain, and 4*s.* 2*d.* from sugar and molasses, while West India rum pays 6*s.* and all other imported spirits a duty of 7*s.* 6*d.* per gallon. These protecting duties secure a ready market to the distiller when grain is low; but when it is high, the foreign article is perhaps too nearly on a par with the colonial.

The duty is levied on the strength of all spirits imported in proportion to the degree in which they may exceed hydrometer proof.

The rum sent from Bengal to the colony has been estimated as high as thirty and forty per cent. above proof, while that brought from other places seldom exceeded from twenty to thirty. In 1819, the quantity of spirits issued from the bonded store to dealers, amounted to 58,079 gallons, and in 1820, to 69,745 gallons. To which if we add in the first year 18,743, and in the second, 17,062 gallons, given out on account of government, the annual consumption of the colony, making some allowance for the strength, and for what is sold directly from the importer, may be estimated at 100,000 gallons. This is a prodigious quantity, when we consider the population, which, in 1820, did not exceed 28,939 persons, and of these there were 5,668 children. Making no allowance for the latter, the quantity of spirits swallowed by each individual, yearly, comes to somewhat better than five gallons and three pints, which exceeds the consumption of the proportion for the population of Ireland by four gallons, and of that of Scotland by more than three. If to this consumption of ardent spirits there be superadded the same quantity of wine and malt liquors, the amount will vastly exceed that used by the same number of inhabitants in any part of the world. This statement may be illustrated by the following anecdote told by an Irishman, located there with many of his countrymen, as characteristic of the habits of these people, some of whom are seldom sober during the whole year:—"Why, Denis," says an observer to one who was a great votary of St. Patrick, "surely the saint could not be born on every day in the last week?" Och! replies Denis, "it is only my own bad memory that makes me so particular, for having a mighty love for St. Patrick, I always begin keeping his birth a fortnight before hand, lest I should forget the day; and after it is over, why the devil burn me but I always forget to leave off."

Masters are allowed, by an act of council, to pay servants part of their wages in spirits, as they are found to be the best stimulants to exertion; and in order to prevent them from repairing to public-houses to spend their earnings, which, before this regulation, was a common practice, and productive of bad consequences. Servants have been known to travel upwards of thirty miles to a public-house to spend the few dollars which they had earned by hard labour. This species of payment is a melancholy proof of the fondness of the inhabitants for spirituous liquors. Breton states that a party of six emancipated convicts drank, at one sitting, six bottles of sherry and forty-one of porter. From this we need scarcely wonder at the enormous consumption of the colony.

After the first settlement of New South Wales, it was a practice

to license military men to sell rum and arrack, which, while it lessened the dignity of the army, increased the demoralization of the people. To remedy this evil, alterations were made in the retail of spirituous liquors, and the government took the control into their own hands and established a store at Sydney; but this being attended with inconvenience, the sale got into the hands of the people, and licenses were granted accordingly. The amount of a license is £25 per annum. In 1823, the number of licensed publicans was eighty-three, the free population at the time being nearly 9,000, while in 1832 and 1833, the licensed persons were one hundred and ninety-five; and in 1834, the number was two hundred and seventeen, the licenses producing £5,425; and the direct duties on spirits for the whole colony, £80,000.

Delirium tremens is a disease of frequent occurrence in this quarter. Dr. Lang,* who had good opportunities of seeing the awful effects of ardent spirits when used to excess, pathetically describes this malady; and in the case of a person whom he in vain endeavoured to dissuade commencing the trade of a publican, gives a specimen of its frightful workings. A short time after this person entered on business, he was attacked with this distemper, and the Doctor, on visiting him, found him apparently in the jaws of death—his distracted wife and children standing at the bedside in the utmost agonies. The patient labouring under this malady is distracted with imaginary horrors, he fancies himself haunted by apparitions, the whole frame trembles convulsively under the influence of a disordered imagination, and the nervous system is so frightfully excited, that the bodily functions are totally enervated, and, in many instances, death only brings relief to the unhappy sufferer.

It is to be lamented, that although the settlers of New South Wales are represented by Mr. Bigge as treating the Aborigines with kindness and humanity, yet they have adopted the practice of supplying them with spirits, which sometimes stimulate them to the commission of the most shocking outrages upon each other, and to acts very offensive to delicacy.† At Sydney, the natives barter fish for old clothes, bread, and rum, and their fondness for the last article has led to debaucheries of the most brutal nature—so much so, that the husband disposes of the favours of his wife for a small portion of this liquor; and, shocking to relate, the offspring of such intercourse is

* Account of New South Wales by Dr. Lang.

† Commissioners' Report, printed by order of the House of Commons, 1823, p. 59.

generally sacrificed at the instance of the unnatural husband.* Scarcely, says a voyager, do the intoxicating fumes get into their heads, when they breathe nothing but battle, and shout forth their war-cries. Impatient for murder, they seek antagonists, provoke them by ferocious songs, and demand death in the hope of inflicting it. They find but too readily the opportunity they desire ; and their war-hoop is answered by whooping not less terrible. Then the combatants, drawn up in two lines, perhaps twenty steps from each other, threaten mutually with their long-pointed spears, launch them at their adversaries with wonderful strength and dexterity, and finally attack each other with ponderous and formidable clubs, called *waddies*. Limbs are fractured, bones smashed, skulls laid open ; no exclamation of pain escapes from these ferocious savages, the air resounds only with frightful vociferations. He who falls without having found a victim, dies rather of despair than from the hurts he has received ; and the warrior, who has laid low a few enemies, soon expires, without regretting the loss of life.† In those conflicts, it is common to see the combatants alternately stooping the head to receive the blow of an antagonist, it being deemed cowardice to avoid a stroke. Many of these rencounters are occasioned by the want of prudence in Europeans, who exchange with them spirits for the skins of serpents and other animals, instead of giving them such matters as would administer to the comforts, ease, and civilisation of life. Fortunately for the peaceable portion of society in that quarter, these scenes are not of frequent occurrence, and the exertions of government are not wanting to check them altogether. The settlers have succeeded to engage many of the natives in the labours of the field; and these poor creatures ask no other reward for their toil than a good feast of boiled pumpkin and sugar. Care is taken not to give them any drink till their day's work is over, for, were their appetites satisfied, they would do nothing after, hunger alone having the power of compelling them to work. A draught of the washings of a sugar bag, which is called *bull*, or a drink of grog, at the conclusion of the harvest, sends those simple mortals happy and delighted to rove again among their native wilds. Dawson, a late visitant, speaking of the Aborigines, says that they are inordinately fond of *bull ;* which they sometimes prepare by cutting up a sugar bag and boiling it in water. This they reckon one of the greatest treats, and drink it till they are blown out like an ox swelled with clover and can take no more.‡ They have an

* Cunningham's Residence, vol. ii. p. 20. † Arago's Voyage, 4to. p. 172.

‡ Dawson's Present State of Australia, 8vo. p. 60. Breton's Excursions in New South Wales, 8vo. p. 195.

ingenious mode of making drinking vessels of the bark of the tea-tree, a species of myrtle, and which display more ability than is usually attributed to these savages. They strip the trunk of its bark, and after neatly rolling it up, tie it at one extremity, and thus furnish a goblet sufficient for the purpose. Of this bark they also make baskets, and use its broad lamina as a shelter from rain; it is often spread as a carpet to keep out damp, and is as soft as velvet. It grows in lairs, and is taken off the tree without a hatchet; the nearer the wood, the softer the coating, sometimes scarcely exceeding brown paper in thickness.

Dawson assures us that the colony of New South Wales is in a prosperous condition, and that at Sydney, houses are erecting on every side, while distilleries are at work and steam-engines are common. Grapes are found to succeed in every favorable situation throughout the country. Not only does every establishment prosper, but the vine is likely to afford a supply of wine. The sugar-cane is said to thrive in many places, and fair samples of rum have been produced. A plantation at Port Macquarie contains upwards of ninety acres. As almost every species of fruit known to other countries grows here, materials are afforded for the manufacture of all kinds of drinks found elsewhere. In 1826, Mr. Townson, the author of Travels in Hungary, with other enterprising gentlemen, was actively engaged in the manufacture of Australian wine, and one of them, Mr. George Blaxland, had succeeded so well as to have six pipes and a half of it in his cellar. At present there are many acres of vineyards in the colony; those of the more wealthy proprietors being, for the most part, under the management of scientific and practical vine-dressers from the south of Europe. Wine and brandy have been manufactured to a considerable extent from the grapes of the vineyards of the Messrs. Macarthur at Camden, on the Cow-pasture river. The quality hitherto produced had a strong resemblance to Sauterne, in taste, strength, and appearance. The latest accounts say, that the wine-crops afforded the best promise of a plentiful supply, and gave every hope that this portion of the globe may yet become a flourishing wine country. The wine made in 1834, by Sir John Jameson, at Regentville, was of a superior quality, and the saccharine property of the grapes was such, that scarcely any brandy was deemed necessary.

Cuttings of European and African vines have frequently been imported into this settlement. Mr. Redfern, a respectable colonist, brought with him from Madeira a number of cuttings, and encouraged some Portuguese families acquainted with the culture of the vine, to

emigrate to New South Wales, for the purpose of training the plants and laying down vineyards. Mr. James Busby, British resident in New Zealand, brought to New South Wales upwards of a hundred varieties which he procured in France, and gave them for general cultivation. On the policy of cultivating the vine in this colony, Dr. Lang has made some judicious remarks tending to show, that if wines were manufactured to any considerable extent, it might be the means of advancing the cause of temperance, by placing within the reach of the people a cheap and wholesome beverage, to the exclusion of those inflammatory, deleterious, and expensive liquors so prejudicial to health and morality.*

Temperance Societies are now established in this settlement, which originated in Van Diemen's land through the instrumentality of Mr. Backhouse, a member of the Society of Friends, and salutary effects may be anticipated. Few places, perhaps, on the face of the globe require the exertions of such institutions more.

The only drawback on distilleries and breweries is the scarcity of barley, but this grain is likely to become more extensively cultivated, being so essential to distillation and brewing. Manufactories of this description have every facility for promoting the interests of the proprietors. Though wood is the chief material for fuel in the country portions of the colony, native coal is used in great abundance, and may be had at the Newcastle pits for five shillings the ton, and at Sydney for twenty shillings; the freight being fifteen shillings of the money.†

In 1833, the following beverages rated at:—

	£	s	£	s.
English Ale per hhd.	6	0	to 6	5
Do. per doz.	0	11	to 0	13
Colonial do. per hhd.	0	60	to 0	80
Do. do. per doz.	0	6	to 0	8
English beer per hhd.	5	0	to 5	3
Do. do. per doz.	0	11	to 0	13
Colonial do. per hhd	0	45	to 0	55
Do. do. per gal.	0	2	to 0	0
Rum per gallon	0	9	to 0	10

	s.	d.		s.
Brandy per gal.	12	6	to	14
Gin do. do.	12	6	to	14
Colonial do. do.	7	6	to	0
Wine (port) per doz.	35	0	to	40
Madeira do. do.	35	0	to	40
Sherry do. do.	35	0	to	40
Claret do. do.	50	0	to	60
Cape per gal.	3	6	to	4
Elder per dozen	5	6	to	0

The imports into New South Wales for 1833, were:—

	Gal.		Gal.
Beer and Ale . .	244,490	Geneva . .	17,368½
Cider and Perry . .	2,718	Whiskey . .	112
Rum	335,134	Other Spirits . .	86
Brandy	20,899	Wine . .	161,410

* An Historical and Statistical Account of New South Wales, by the Rev. Dr. Lang, 2 vols. 8vo. London, 1834, vol. i. pp. 363 to 369.

† Cunningham's New South Wales, vol. ii. p. 3.

	£	s.	d.
Duty on Spirits imported in 1832	81,585	1	7
Do. on ditto distilled in the Colony	1,032	0	0
Licenses to retail Wine, Malt, and Spirituous Liquors	7,785	0	0
Licenses to Distil Spirits	25	0	0
Department of the Surveyor of the Distilleries	520	16	8

The settlements of New Holland and Van Diemen's Land are become places of such importance, that the government has turned a great portion of the tide of emigration to their shores; and many now prefer going to those distant regions, than to those of the United States or Canada; the climate being more congenial to British settlers. The agricultural products are valuable, and the efforts that are now making by the settlers, who have already established themselves in these quarters, as well as of those who emigrate there, are calculated to raise the best expectations. Such is the fertility of Van Diemen's Land, that Edward Curr, in his account of that settlement, relates that in 1821, fifty-thousand bushels of wheat were exported from that island to Port Jackson,* besides what was sent to the Cape of Good Hope, Isle of France, and Reio Janeiro: more recent accounts lead us to conclude, that crops are as abundant there as in England. The wheat is said to yield from 60 to 65lbs. per bushel, and, what is singular, it is not subject to the weevil.

In Hobart's Town, as well as in other parts of the settlement, are several breweries and distilleries; but the manufacture is not equal to the consumption; hence there are considerable importations to supply the defect, as is shewn in the following table:—

	1827	1828	1829	1830	1831
	£	£	£	£	£
Beer, in value . .	7,655	6,280	6,040	7,253	2,540
	Gal.	Gal.	Gal.	Gal.	Gal.
Brandy, (Proof), .	12,894	35,352	7,315	1,776	2,273
Geneva, ...	3,857	4,420	4,231	1,758	1679
Rum, .	87,043	77,132	24,441	20,204	58,983
Wines, .	53,532	30,458	15,198	16,084	18,118

New South Wales is represented to be rather barren immediately about the coast, but beyond that the country improves, and the trees of the forest rise to the most stately dimensions. When a traveller has advanced about twenty miles into the interior, he beholds a country truly beautiful, displaying an endless variety of hill and dale,

* An Account of the Colony of Van Diemen's Land, 12mo. London, 1824.

clothed in the most luxuriant herbage, and disclosing regions fit to be inhabited by civilized man. In those countries, the arts and manufactures are progressing, and promise in a reasonable process of time to emulate those in many parts of Europe.

Coasting along the east of Africa, little interest or information has been obtained respecting the various nations extending from Abyssinia to the settlements bordering on the Cape of Good Hope. In the kingdoms of Adel and Ajan, the inhabitants are generally Mahometans; and though they pretend to comply with the restrictions of the Koran, yet they indulge in the use of *bousa* and other intoxicating beverages. In Ajan, a species of brandy is made from dates and raisins furnished by the Arabians, with whom the inhabitants carry on a considerable intercourse. In Monemugi, which lies west of Zanguebar, abundance of palm-wine is manufactured, and honey is so plentiful that above the one-half of it is lost, the natives not being able to consume it; and therefore it might be to them a valuable article, had they a regular intercourse with civilized countries.

In Mozambique, the chief article of cultivation is the *manioca* or *mandioca* root. The principal trees are the cocoa-nut, cachew, mango, papaw, and orange. The natives are skilled in making beverages from the cocoa in the manner practised by the other nations. They deal in palm-wine, and the Portuguese settlers have made them acquainted with those liquors which they import from Europe.

The Zoola nation, which lies in the interior, between Delagoa bay and the bay of Natal, has a description of beer with which the natives regale and intoxicate themselves. This beer they make from a seed termed *loopoco*: it is somewhat like rape in size and colour. It contains very powerful fermenting properties; and when drawn off from the vessels in which it has been prepared, it forms an excellent beverage, both potent and stimulating, and has a red or light brown tinge. Mr. Isaacs, a late sojourner in this country, often partook of this liquor, and acknowledges its enlivening and refreshing virtues. He usually received it from the king, or as a present from some of his chiefs.* They likewise make several sorts of drinks from their fruit; but the most common liquor used in the country is made from millet, and is termed *huyembo* or *puembo*.

The Delagoa territory produces rice and maize to a great extent, and from the latter grain are made various beverages. The sugar-

* Isaacs' Travels and Adventures in Africa, descriptive of the Zoolas, their manners and customs, &c. 2 vols. 8vo. vol. ii. p. 319.

cane is also found in great abundance, but it is not turned to the advantage it might afford. The Persees on the coast of Malabar send spirits to this territory, with other articles in exchange for the teeth of the elephant and hippopotamus, ambergris, and gold dust. Besides, since Delagoa bay has become the resort of many South-Sea whalers, different liquors are sent thither from the Cape; and the Portuguese, carrying on a trade with the natives, introduce wines, and other beverages. When a vessel arrives, an officer, called the *king of the waters*, informs the chief, who immediately attends; and after receiving a present from the captain, makes a more than ample return in provisions. By securing the friendship of the *king of the waters*, for a few empty bottles, or some old clothes, buttons, or iron hoops, a constant supply of animal and vegetable food may be obtained. The inhabitants of the interior have two kinds of native spirituous liquors peculiar to themselves; one termed *Epĕāhlă*, and the other *Wōcāhnyēyē*. The first is prepared in the following manner:—A large quantity of maize, with a certain proportion of water, is put into a wooden mortar, and pounded for half an hour, after which it is placed in the shade to ferment. At the end of two days, it is taken out and boiled, and, when cold, a small quantity of grain called *Andrealo*, a sort of millet well pounded, is added to it, and the whole, after standing a few hours, is strained through a mat bag, from which the *Epĕāhlă* oozes out perfectly pure and of a milk-white colour. In one day it is drinkable, and on the next it is sour, and less than two bottles will occasion inebriation. The *Wocāhnyēyē* is obtained from the *Măkkāhnyēyē*, a fruit resembling guava, and which grows on a lofty tree of a whitish appearance, called the *Kāhnyēyē*. When the requisite quantity of fruit is picked, a small hole is cut in each, through which the juice is squeezed into a large boiler, where, after having stood for some time over the fire, it remains to ferment until the next day. More juice is then added, and the same operation is repeated with the whole. At the close of the second day it is drinkable, and will continue so for three days; yet its nature is not half so intoxicating as that of the *Epĕāhlă*. It is almost colourless, and has a sweet and pleasant flavour.*

In Sofala is made a beer from rice and millet, as well as other liquors drawn from honey, palm, and different sorts of fruit. In their feasts and funeral ceremonies, larger quantities of these liquors are consumed. At stated periods of the moon, they pay an offering

* Owen's Voyage to Africa, &c. edited by Botcler, 2 vols. 8vo. vol. i. p. 91.

to their dead friends, particularly to their parents, before whose bones which they collect after the flesh has been consumed, they place victuals and liquors, and ask requests of them as if they were still living. Immediately after this, they eat and drink those offerings to the dead in social harmony.

In Monomotapa, the beverages are made from honey, millet, and rice. Palm-wine is esteemed a royal liquor, because it is chiefly used at court. It is preserved in curious vessels made of horn, and is commonly mixed with manna, ambergris, musk, and other highly-scented perfumes. At the court of some of the monarchs of Monomotapa, it was customary for some of the musicians to be veiled during the time of the emperor's repast to prevent them seeing him eat or drink, while the courtiers cried aloud on the drinking of a goblet, "Pray for the health and prosperity of the emperor."

In Quiloa, it was formerly a practice to drink human blood and other liquors out of cups made of human skulls; but since the slave trade has diminished and civilisation advanced, this barbarous custom has almost entirely disappeared.

At the Cape of Good Hope, since its colonization by the Dutch under Van Riebeck, in 1650, the vine has been cultivated with considerable success. This was owing to the encouragement given to a number of French families, who had emigrated from their native country and settled in this colony, in consequence of the revocation of the Edict of Nantes. A place is still pointed out, within a moderate distance of Cape Town, which is named after the circumstance *Fransche hoek,* or French corner; and here the vine was first planted and the foundation of the wine trade of the colony originated.

The wine called Constantia, so much prized in Europe, is the produce of two farms known by that name, and situated within eight or nine miles of the Cape, close under the mountains on gently undulating grounds between Table Bay and False Bay. These farms, on an average, yield about 75 leagers* per year, which, at 160 gallons the leager, gives a quantity equal to 12,000; but De la Caille and Barrow have calculated the produce at a great deal more. According to Stavorinus, these two farms cover about 40 acres, and their annual produce is about 60 pipes of red and 90 of white wine; the latter is made on the farm called little Constantia. Besides this excellent wine, many other sorts are made of different flavours. Among these,

* A leager is nearly four awms, and an awm contains about forty gallons, English.

the Madeira of the Cape, which is sent to Holland, America, the Dutch settlements in India, and to England, is considered the best. It is a boiled wine, and is said to be much improved by the voyage. From 20 to 30 rix-dollars the leager, according to Barrow and others, is the common price that the farmer obtains for his wine at Cape Town, where it is afterwards sold at the rate of from 40, 50, 60, to 80 and 100 dollars; and that too, perhaps, after undergoing adulteration. Since the war has ceased, new common wine may be had for a penny or three half-pence per bottle. A half awm, or 20 gallons of good wine may be procured for six dollars, or nine shillings. Pontac rates at from 40 to 50 dollars the leager of 152 gallons; others rate at from 25 to 30 dollars.

The trade in this article is of great consequence at the Cape, and the merchants are particular in the mode of storing and securing the wine. They generally keep it in vaults and cellars in large vessels made of mahogany, or a wood resembling it, very thick, highly polished, and shaped like a hogshead. These vessels are kept as clean as our dining tables, and are bound round with great hoops of brass, while the edges are secured with clasps of the same metal, so that neither time nor accident can damage them. One of these tuns, or reservoirs, will contain from six to seven hundred and even one thousand gallons. The bung-holes are secured with plates of brass hasped down and locked. The cocks are also strong and large, with locks aud keys to them, so that the servants or slaves are prevented from abstracting any of the wine, as the casks are never opened, except in the presence of one of the proprietors. Many of these tuns are elegantly carved and ornamented with figures.* A man-hole is usually made near the cock and secured by brass screws; it is occasionally opened for the purpose of cleansing the vessel of the lees. Some of the cellars are so spacious as to contain one hundred of these very large casks. The wines are racked from vessel to vessel till completely fined; should any acidity appear, it is checked by simply dipping a piece of rag in melted brimstone, and, when ignited, it is suspended in the casks from the bung-hole, which has the effect of checking its further progress. The lees of the wine is converted into *argol*, and exported to England and other places for the use of dyers. The licenses on the canteens are high; they are mere dram-shops and monopolies of the brewers, frequented only by the lower class of people. When Mr. Barrow visited the Cape, a pint of good wine might have been purchased for three pence; and, had it not been for

* Percival's Account of the Cape of Good Hope, 4to.

the license on the privilege of retailing, it might have been obtained for three half-pence.

There is no duty on wine in the colony except upon what is brought to the Cape market, and there it is subject to a tax of three rix-dollars the leager. Brandy or Brandewyn, as it is called at the Cape, is also exempt, except on passing the barrier, when it is charged at the same rate of duty as the wine.

With the manufacture of this spirit the vine-growers seem not to be well acquainted, as it has been hitherto considered of an indifferent quality. The brandy of the Cape is principally extracted from the husks and stalks of the grapes, mixed up and fermented with the lees of wine; other ingredients are sometimes used of a less grateful nature; hence it is so fiery and unwholesome as to be rather a source of disease than of assistance to the functions of life. The whole of the operation is generally committed to the care of a slave, who, having neither knowledge of nor interest in the process, pays no attention to the quality of the spirit. Through this neglect it contracts a strong empyreumatic flavour, which it never loses.* This spirit has been long in use at the Cape, though the better sort of people among the Dutch seldom drink of it, yet it is eagerly purchased by the Hottentots and Caffre hordes, who barter their cattle and other commodities for it. This branch of industry, if well conducted, offers a good opportunity to persons of capital and ingenuity, and besides affording a lucrative article of commerce by which a fortune might be realized, it would improve the quality as well as enhance the character of the wines. The stills are small, averaging from 40 to 80 gallons, they are made for the most part at Cape Town; and are sometimes made wholly of copper, yet commonly have only the bottom of that metal. No art is displayed in their erection, they being frequently worked in the excavation of a bank, or in an open shed, without any mechanical contrivance or convenience of buildings. Francis Collison, an Englishman, in 1832, erected a respectable distillery in Cape Town, and made brandy from the wine purchased on his own account, or distilled for the growers at a certain premium for his trouble. Reeves and Mills had a distillery at work in 1833, but, from losses in trade, it ceased in its operations. At Stellenbosch, a village about five hours' ride from the Cape, the firm of Muller and Company have a good distillery, an excellent supply of water, and facilities for carrying on business extensively. This concern is worked on the same principle as that of Mr. Collison.

* Barrow's Travels in Southern Africa, 4to. vol. ii. p. 320.

The following quantities of wine and brandy, stated by Barrow to have passed the barrier, will shew the extent of the trade for a period of four years :—

1799.....	6,953⅝	leagers of wine and	598½	leagers of brandy.
1800.....	5,199⅞	do.	472¾	do.
1801.....	5,463⅞	do.	320⅛	do.
1802.....	4,031⅞	do.	273⅞	do.

This includes the consumption of the town, the army and navy, as well as the exportation for that time, which is said to be from 400 to 800 leagers of wine, and from 30 to 100 of brandy annually, besides the produce of the Constantia farms. Since that settlement came into the hands of the British, this trade has gradually increased, owing in a great measure to the salutary enactments of the legislature. The revenue arising from spirits, beer, and brewing licenses, for the year 1820, amounted to £1,527 10s. 0d.

Great quantities of brandy are carried by means of waggons through the most remote parts of the colony, and disposed of by persons denominated *Smouses*. The Dutch settlers prefer drinking brandy raw or unmixed with water, and say of the English that they all murder good brandy by making grog of it, adding, that punch and wine are but foul water when compared to the pure, unpolluted, high-flavoured brandy. A dram of this liquor is termed *soopie*, a word synonymous with our glass. Drinking is often carried to excess, and here, as elsewhere, productive of evil consequences, and sometimes exciting to extraordinary feats. It is related of an individual, that in his cups he laid a wager, that he would go into the forest and pluck three hairs out of an elephant's tail, which he performed with great eclat. Not satisfied with this chivalrous act, he made another bet, that he would return to the forest and shoot the same animal. His aim proving unsuccessful, the provoked beast rushed on him, forced his tusks through his body, and trampled him to a mummy in an instant. The negroes at the Cape, who sometimes carry their bacchanalian propensities to excess, expose themselves to the damp of the night. Quarrelling, arising from inebriety, is, however, rare; nor can it be said that the habitual drunkard is a character to be met with in common. Many of the poor Hottentots, led astray by their weaknesses, and exposed to the influence of the moon, have paid dearly for their revels; for strange as it may appear, it is unquestionable that the lunar beams have produced the same effects as the solar, causing a mental derangement similar to that of a vertical sun. While meat exposed to the influence of the moon, has been known to become

putrid in the course of a night, whereas, if secured from the lunar influence, and exposed to that of the night air only, no bad consequences have been observed to follow.

The quantity of wine imported from the Cape into Great Britain, &c. will be found in the Addenda.

The whole produce of the Cape is supposed at present to be about 12,000 leagers, comprising only what crosses the barrier; with the waste it may be computed at about 14,000 pipes. The consumption of the colony is calculated at 6,000, the shipment to St. Helena about 2,000, and the remainder is for this country and its dependencies.* There are no breweries deserving of notice, though a kind of beer is said to be made by the Dutch, in which a species of bitter herb is used instead of hops. The whole of the malt drink comes from Europe, and is of course very dear.

This colony is susceptible of great improvement, and might be made of essential benefit to the British empire. Were the vine plantations properly managed, and a due regard paid to the selection of the grapes, and the manufacture of wine, much of the money that is sent to foreign countries for this article might be saved and turned to our own advantage. The vines, according to Latrobe, are permitted to grow without espaliers, placed in rows like currant-bushes in our gardens, in order to afford room to the vine-dressers to go between them to weed them without injury. When arrived at a certain height, the upper shoots are taken off to increase the quantity of grapes, a method very different from that practised in Europe. According to Stavorinus, a thousand of them will produce a leager of wine and sometimes more. In the Constantia vineyards, few of the planks exceed two feet in height, though some of them have been in the ground for one hundred years. This peculiarity is said to be very advantageous, for the fruit hangs so near the ground and is so sheltered by a leafy screen of fine tall oaks, that the reflection of the sun from the white earth below is nearly as powerful as his rays from above.

The mode of pressing the grapes in this colony, was formerly conducted in the following simple manner:—The fruit is thrown into a vessel, the bottom and sides of which are perforated with holes; and this is placed upon a cross piece of wood within another larger vessel having a spigot and fauset through which the juice flows into a receiver underneath. The grapes in the wine vessel are trodden by three or four slaves, who support themselves during the operation by a rope

* Parliamentary Report, No. 703, 1821, p. 56, &c.

from the ceiling, continuing to trample till all the juice is expressed. Since the time of the Cape wine getting into demand, presses of wood have been introduced possessing a greater power in obtaining a larger quantity of must, than what could be procured by the treading of the slaves.

To the farmer the vine is the most profitable object of consideration, and may be considered the staple article of culture. The size and flavour of the grapes in the colony are not inferior to those of the best description in other countries; but there are only certain portions of the settlement consisting of light, dry soil which are the most congenial to the production of good wines. That of Constantia, more resembling a liqueur than a wine, is the best; and it is singular, that the vine, from which it is produced, loses its richness and luxuriance, if removed to the distance of half a mile from that plantation. The wines produced at the Drakenstein farm are said to be equally good as the Constantia, though on account of the high character of the latter, they do not bring one-sixth of the price. Ten or twelve different kinds of wine are manufactured in the several districts, having each a distinct flavour and quality, according to the situation and nature of the soils in which they are produced. When the Dutch had possession, the directors reserved to themselves the exclusive sale of the Constantia wine, and as it could not be exported by others to Europe under that name, the planters when thus prohibited, adopted the expedient of giving to their wines the name of *maag*, or stomach-wine, to secure a demand.

Much rain is unfavourable to the culture of the grape, and the juice will not contain the same quantity of saccharine matter when exposed to moisture, which it does when under a genial sun, and protected from the coldness which always accompanies showers. To what cause the poverty and want of richness and body in many of the Cape wines may be attributed, it would be difficult to determine—whether the vines, if supported by trellis work, or planted like currant-bushes, might flourish best and be most productive. It appears, however, that more is owing to the mode of making the wine than to the quality of the grape; and this will appear evident when it is known that the grapes of every description, good and bad, ripe and unripe, clean and unclean, are all put together with the stems into the same press, shewing that the quantity more than the quality is the object; and it is therefore clear, that the liquor must partake of the consequences of such admixtures. It has been alleged that even where great pains were taken to make wine of the best possible kind, the attempt has fallen short of producing an article equal to that made in France,

Portugal, or Madeira. Strange as it may appear, it is a certain fact not yet accounted for, that good grapes sometimes produce inferior wine, while bad grapes on the other hand have been known to yield good wine. The grapes of Gascony, Burgundy, and Champagne, as well as those of the many celebrated vineyards on the Rhine, are rather insipid. Other circumstances, therefore, besides fine materials, seem to be required for the production of wine of a good quality. A good deal must depend on the management of the fermentation, and the fining of the liquor; while the bad quality of the brandy made at the Cape and mixed with the wines must tend to injure them in proportion to the use made of that spirit.

To whatever cause it may be attributed, the wines of the Cape do not rank in such high estimation as those produced elsewhere. Some endeavour to account for the earthy flavour of the wine as to its slightly acid taste, by the shortness of the stems on which the grapes are borne, as being consequently more exposed to the damps and vapours of the soil from their low situation; others think that these peculiarities are the consequence of the destructive effects of the east winds bending the bushes to the ground, and causing the fruit to imbibe that earthy flavour just alluded to. Perhaps a good deal is owing to the soil, as well as to the salt-petre with which, it is said, the sands of the country are impregnated. More, however, may be attributed to the negligence of the vine-growers themselves, than to any other cause, since the bunches of grapes are permitted to rest on the ground and become coated with clay, in which state they are thrown into the wine-press, and consequently impart a disagreeable taste to the liquor. The casks too, are bad, and often so much smoked with sulphur as to leave its effects perceptible in the wine for two or three years; and often causing it to sour, especially if exported. The vines of different countries ought to be tried here, as there are some better adapted to particular soils than others. The muscadel grape is the one from which the Constantia wine is principally made; to this as well as to the precaution of the farmer in not using the fruit nor bruising the stalks until fully ripe, may be attributed the estimable qualities of that wine. Were the grapes properly picked and assorted, previously to being pressed, and strict cleanliness observed, there is nothing to prevent the wines of the Cape from bearing a fair competition with those of any other country. The earliest fruit of the season here is the *purple* grape, next the *hauny* pod, both of which are fleshy and most used for the table or are made into raisins. The *crystal* grape, which comes in last, is sweet and luscious, being all juice and quite transparent.

The practice of the government in farming the retail licenses, has tended to injure the character of the Cape wines, as the purchaser, with the view of making the most of his speculation, employs the retailer to sell the very worst description of the article; hence there is a continual run on an inferior, cheap wine, to the total exclusion of useful competition. Thirty three rix-dollars have been given by one person for a year's privilege of licensing the retailers, and, like every monopolist, the purchaser is always watchful of his own interest.

Wine, at the Cape, generally sells at from 20 to 40 rix-dollars the half awm, or 20 gallons. In the frontier settlements, some thriving vineyards are to be found, and the wine, particularly that kept for the use of the owners, is of a superior quality. The vine-growers have much to contend with from the nature of the seasons and the rapid transitions which frequently occur in the state of the atmosphere, while the labour of some years is destroyed by a sudden deluge of rain or the sweeping blasts of an unexpected whirlwind. Many planters can do little more than support a respectable appearance; and although the British government gave great encouragement to the cultivation of the vine, yet the trade has not been successful in proportion to the capital invested in it. Mr. M'Kinnon, in his place in parliament in September, 1830, stated that there were £1,900,000 embarked in the Cape wine trade by British merchants alone. Every inducement was held out to further the interests of the planters, and the consequences were for some time visible; but it is to be feared, as already stated, that the quantity was the object of greater consideration than the quality, which, in a great measure, has entailed upon it the character of inferiority; besides which, there is, no doubt, a prejudice against it, through the influence of those whose interest it is to extol the virtues of other wines. The wine districts do not extend farther than 30 or 40 miles from Cape Town, and from the sandy nature of the roads it requires 18 oxen to convey two leagers, or 304 gallons, from the most remote of these districts to that place; but as conveyance of this nature is easily procured, it is attended with very little expense. This colony derives much advantage from the interchange of its wine with other articles, from the Mauritius, Brazils, Van Diemen's Land, and New South Wales.

The scenery connected with the vineyards does not convey anything striking or sublime, and the boundaries of many of them are only distinguished by small pillars. The settlements of great and little Drakenstein, however, are singularly beautiful, and embrace a tract of country six or eight miles in circumference. They are situated about seven hours' ride from Cape Town. Here, both red

and white wine of excellent quality are made, and that called *pontac*, (an imitation of port,) when of a proper age, is a superior article.

The Wagon-maker's Valley, as it is termed, is three hours' ride from Drakenstein, and is one of the most enchanting places in the South of Africa. It is embosomed in hills, clothed with groves of orange and citron, pomegranates and peaches, apples and shaddocks, and every species of delicious fruit, which, heightened by the radiance of a cloudless sun, and fanned by gently cooling breezes, render it one of the most agreeable and fascinating retreats in nature.

The barley grown in the colony is of an inferior quality, resembling bigg. Whether the process of malting is not there properly understood, or that there is a defect in the grain, is not well known, but it does not germinate like the same description of grain in Great Britain. For this reason, the breweries at Cape Town have been supplied with malt chiefly from England, and the beer is of good quality and in general use. The present brewing concerns are those of De Neys and Co., Van Reenan, Letterstead, Le Britton and Co., Lyngenfelter and Co., Whiskin and Co.—The beer and porter made by these traders are chiefly from sugar; but all of them use grain in greater or less quantities; and, latterly, they have got into the practice of malting the grain of the colony more extensively than formerly. The Dutch Company, at an early period of this settlement, introduced the Deventer method of brewing under the superintendence of Jacob Lonwen. Hops are brought from Europe for the use of these establishments, although it is thought that they might be cultivated in some places of the settlement with success.* Maize is reared in several varieties, particularly among the Caffres, one species of which tastes like the sugar-cane, but is astringent and of a bitter flavour. This kind is cultivated solely for the purpose of making beer, which is conducted in the following manner:—The grain is first malted, afterwards dried and ground, and then boiled to a thick consistency which is subsequently mixed with two parts of water. Before it is completely cooled, a portion of the malt finely powdered is thrown into the mixture, fermentation speedily commences, and the liquor is in a short time fit for use. This beer is said not to be unpleasant, and that with a little care it might be rendered valuable.†

Amongst the tribes on the coast of Caffraria, grain is preserved in small pits about a foot in width at the surface, but gradually widening

* Vide Notes on the Cape of Good Hope, 8vo. passim.

† Vide Appendix to 2d vol. p. 360, of Thompson's Travels in South Africa, 1827.

to the bottom, all the sides being plastered with a mixture of sand and cow-dung, and holding from about 10 to 28 bushels. The top is secured by a flat stone, and the whole is rendered impervious to water. A similar practice is current in Malta, Egypt, and other parts of the world. Dumont, when in slavery among the Koubals in Africa, describes the *matamores* of this people as vast souterrains or immense granaries of wheat, lodged under ground for its better preservation. The excavations are made to the depth of 80 feet, wide in proportion, and sometimes equal to a whole field in extent. The flooring and walls are of timber, over which mats are spread, and over them planks are placed. These reservoirs are filled to the height of 70 feet, and they are covered at the top with mats and planks as at the sides and bottom. Over the whole, earth is spread to such a depth that it may be cultivated with the same ease and success as any part of the adjoining lands. This contrivance prevents strangers or invaders from discovering those valuable repositories; and the grain within these souterrains keeps fresh for twelve or fifteen years. Similar contrivances for the preservation of grain were resorted to in France; and during a season of scarcity, M. Ternaux, the celebrated agriculturist, opened *siloes* or subterraneous granaries which had been several years closed, out of which he supplied the public with fresh and wholesome corn.

The Moors in Spain were likewise in the habit of depositing grain in the caverns of rocks, lined with straw, the mouths of which were covered with the same material, where it was preserved for a long succession of years. On the birth of every child, a cavern was filled with corn, which was destined to be its portion when it arrived at maturity.

Distillation is unknown to the Caffrarian tribes, most of whom have scarcely a vessel that would endure fire. The Caffres make a sort of coarse earthen-ware by kneading clay and fine sand together, and afterwards shaping the paste into a vessel with the hand. They are again exposed to the influence of the sun for some time, and hardened in a fire made of cow-dung; these vessels serve for cooking victuals and other culinary purposes. Notwithstanding they are so numerous, yet the people carry their milk and other liquids in baskets made from rushes, which are so close as to prevent the escape of any fluid. One tribe of Caffres, the Amazizi, have the art of making a spirituous drink from millet. A wine of fine flavour and of highly intoxicating quality is made from a fruit, termed *gagahoguka*, by the Jamatians, a Caffre race that resides to the south of Macaranga.

During the stay of Damberger with the Jamatians, he often drank of this liquor, and warmly enjoyed its taste, flavour, and influence.

The Koramas possess the method of making a very intoxicating sort of mead or hydromel, by fermenting honey with the juice of a certain root, and the colonial Hottentots, who are in possesion of the secret, frequently sell portions of this fermenting substance for spirits and tobacco. Of the latter article, the Bushmen at the Cape are so excessively fond, that they smoke it with such adroitness as to diffuse the steam through both the mouth and nostrils; the pipe used by these people is the shank-bone of a sheep. One circumstance attending the weddings of the Hottentots is laudable, which is that, though at other times prone to drunkenness, they never drink on these occasions, neither do they dance nor play upon musical instruments. Honey is plentiful in various parts of the interior; the bees generally construct their cells in the hollows of trees or cavities of rocks, which are frequently discovered by means of a bird, known to naturalists by the name of the honey-bird. This creature serves as a guide to the Hottentots for finding out the honey of the country. When the voice of the bird is heard, the Hottentot answers by a whistle and follows it, still whistling his response to every note, till at length the little warbler conducts him to the luscious treasure from which neither returns without the object of the pursuit. The honey is, for the most part, mixed with an umbelliferous plant, termed *Gli*, first reduced to powder and then blended with cold water; after letting it ferment for a night, a sort of metheglin is obtained, two glasses of which are sufficient to produce intoxication. Of the pulverized root of this plant, two handfuls are considered quite enough to make a few gallons.*

The sugar-cane might be cultivated to any extent, and rum and sugar manufactured of a quality not inferior to any that are made elsewhere. How far it might be the interest of government to give a preference to the plantations in this quarter, I am not prepared to say; but, unquestionably, the country in the vicinity of the Cape is more congenial to health, and affords better promise of a redundant population than most of our other foreign colonies. For the emigrant, it possesses many advantages and inducements, particularly as the government patronise colonization; but the prevalence and effects of certain periodical winds render many parts of the country not so healthy to Europeans as could be wished: still, however, from the

* Thunberg's Travels, vol. ii. p. 31.

productive nature of the soil, it seems to offer a sufficient remuneration for the toil of the agriculturist. Wheat, Indian corn, and other grain thrive well, and tobacco could be made a most productive and valuable source of commerce: hitherto the colonists have not cultivated more than what serves domestic consumption; but what has been raised is not inferior to the best tobacco of Virginia growth. Of the vine enough has been said to show how far a person might embark with safety in its cultivation; and from the local position of the Cape and its facilities for trade, an adventurer could scarcely fail of success in embarking a capital in speculations in this colony in preference to many others.

The island of St. Helena has little to attract attention: but as it is a sort of rendezvous for vessels passing to and from India, it merits some notice here not from anything indigenous, but from its locality and its having been the residence of Napoleon Buonaparte. In Brooke's History of this island, are found some curious and quaint regulations of its early governors. From 1673 to 1687, a tax of 10s. was imposed on every hogshead of wine and arrack that was landed on the island, and to prevent a scarcity of timber, which was much consumed in the distillation of spirits from potatoes, an impost of 12d. was levied for every hundred weight of wood appropriated to that purpose, besides 4d. for every gallon of liquor so manufactured. Notwithstanding this restriction, the number of stills in the island became at length such a nuisance, that it was found necessary to suppress them entirely, which was effected by an order from England in 1709. By an edict of one of the governors, in 1709, to regulate the sales of the public houses, it was ordered that a bowl of punch, made with one pint of arrack and having a due proportion of sugar and lemon, should be sold for two shillings and no more, while arrack rated at six shillings per gallon; and a violation of this order was followed by the forfeiture of the license and double the value of the liquor. If any person considered this a grievance, he was at liberty to give up his license for any unexpired portion of the year, and be refunded for that time at the rate of £4 per annum. In 1754, the East India Company issued laws to prevent intemperance in drinking; for the first offence, admonition only was resorted to; for the second a fine of five shillings was to be exacted; and persons of rank were to pay in proportion to their station, as it was expected that they should be an example to others.

From a species of the gum-tree, which grows from 20 to 50 feet in height, a kind of toddy is extracted by the inhabitants; but it is not collected nor used to any extent. Almost every valley in the

island produces vines but in too scanty a portion to afford wine; the supply of this and other liquors being brought from other parts of the world. The only revenue accruing to the East India Company, according to Lord Valentia, was that derivable from the rents of the lands and the monopoly of the arrack imported into the island, which annually netted £6,000.

Passing to the islands in the Mexican gulf, known by the general name of the West Indies, we find the distillation of ardent spirits carried on there to an extent not surpassed within the same limits of territory in any other quarter of the world. The time at which the manufacture commenced there is not exactly ascertained, but the first plantation of sugar-canes was established, according to Oveido Valdes, in Hispaniola or St. Domingo, by the Spaniards, in 1520.* The rapidity of the culture was such, that, in 1535, there were not less than thirty plantations on the island; and, according to Bingo, there were in 1544, thirty four sugar-mills established. As the use of the still was then known, it may be conjectured that not long after this period the distillation of rum suggested itself, as the only means to compensate the planter for the loss incurred in disposing of the skimmings and molasses, after their separation from the sugar.

As to the name given to this spirit, writers are at variance, some attributing its derivation to one thing and some to another. In the German language, it is simply termed *rum;* in the Dutch *rum*, and *keelduivel;*—in the Danish, *rom*, and *geldyvel;*—in the Swedish, *rom*, *rum;*—in the French, *rum*, *gueldive;*—in the Italian, *rum*, *taffia;*—in the Spanish *ron*, *rom*, *tafia;*—in the Portuguese, *ron;*—and in the Russian, *rom*. The word *rum* seems to have been formerly used in Great Britain to convey the idea of any thing *fine*, *rich*, *best*, or *excellent:* thus to express a superior brandy, it was common to say *rum Nantz*, because the best description of that liquor was distilled at Nantz; and as spirits extracted from molasses could not well be classed under the terms of whiskey, brandy, arrack, &c. it was called *rum*, to denote its excellence or superior quality. This term is probably taken from the last syllable of the Latin word *saccharum* (sugar); and it is not a little singular, that the liquor itself has been always known among the native Americans by the name of *rum*.

The process of manufacturing sugar from the cane, is too well known to require a description here, and the molasses, from which the rum is principally made, is the sirup of the sugar (or the drainings after it is put into the hogshead), which no course of boiling can

* Historia Natural. de las Indias. Poyer's Hist. Barbadoes, 4to. p. 40. Alceda's Dictionary.

bring to a thicker consistence. The distillation of this substance, together with the skimmings of the boilers, has been thus described to the author by a gentleman long resident in Demerary and the West Indies:—

From the liquor of the cane, which runs warm from the coppers through a trough to a receiver prepared for that purpose, the skimmings are taken, and, with some of the liquor itself, are pumped from a cistern containing from 300 to 800 gallons, when the fluid is mixed with water and molasses in the proportion of twenty-five gallons to one hundred. When this mixture is sufficiently blended together in the vats (which in some plantations amount to thirty), it is covered over with boards or mats made of plantain leaves, and allowed to ferment for three or four days, or longer, should there be a want of yeast or other ferment to make it work, which often occurs at the commencement of the season. When reduced to a due degree of acidity, which is ascertained by the subsiding of the fermentation, it is run into a still proportioned to the vat, and wrought off as low wines, in which state it is put into the still again. The first run, or discharge after it is thus returned to the still, is taken off for high wines (as they are termed), or strong rum, in the proportion of 25 gallons to 300, the strength of which, when tried by a glass-bead instrument, is from 18° to 22°. The second run of the still, which is drawn off in cans and carried by negroes to another vessel, is of a strength from 23° to 26°. From these two runnings of the still, the rum exported from the colony of Demerary is made up. The deficiency in the strength of the second distillation is supplied by an addition from the first, which is always stronger than that exported, and of too ardent a nature to be used by itself, 25° being colony proof. In the Windward islands, one-third of the skimmings is mixed with one-third of the lees, or *dunder*, and one-third of water. When these begin to ferment, which they usually do in twenty-four hours, the first mixture of molasses takes place in the proportion of six gallons for every hundred gallons of the fermenting liquor, and a day or two afterwards an additional quantity of molasses is added. The fermentation is tempered by the addition of cold or warm water. *Dunder*, a term unfamiliar to the ear of a European distiller, is the lees or feculencies of former distillations, serving all the purposes of yeast in the fermentation. It is derived from a Spanish word, *redunder*, the same as *redundans* in Latin, and is well known among the planters in the West Indies. The attenuating properties of this ferment are such, that the materials, with which it is mixed, are said to yield a much greater proportion of spirit than could be obtained if they were fermented

without it.* It serves the same purpose as jalap mixed with molasses, which has been sometimes employed in Great Britain for cutting down the frothy head at the close of the fermentation; and it is usually preserved from one year to another for this purpose; and in such large quantities as to fill most of the backs or fermenting tuns. Dunder soon becomes covered with so thick a film as to exclude the air, and the sediment leaves the intermediate fluid pure and of a bright amber colour, which, when carefully drawn off, is employed as already described, in proportions suited to the nature of the fermentation, and to this dunder many attribute the best flavour of the rum. Besides this very essential ingredient, various mixtures are used in the fermenting process, such as tartar, nitre, sea-water, or common salt. In some of the islands, a still usually makes about 220 gallons of rum in the day. These are produced from about 530 gallons of low wines; or 113 of rum from 1200 gallons of wash; this liquor is of such a strength that olive oil will sink in it, and seldom exceeds proof, though, sometimes, by double distillation, it is made to approach the strength of alcohol. The process of distilling is in general slow, and much caution is observed in the condensation of the spirit. To provide against a scarcity of water, which often occurs in the islands, they preserve, in large tuns or tanks, a sufficiency of rain-water to enable them to mix the molasses, &c. and to cool the worm of the still. As the water becomes heated in the worm-tub, it is carried to coolers or cisterns, and, when cold, is run again upon the worm. In most of the islands, the curing-houses for sugar and the distilleries for rum are constructed on the sides of canals, and the canes are carried either in boats or by negroes from the plantations to these houses. From five to six immense copper boilers are kept in each of those houses, while the greatest cleanliness is preserved in the distillery, a precaution highly necessary in every concern of this kind, and which must contribute largely to the strength and purity of the rum.† In Jamaica, the operations go on without intermission; the negroes being formed into what are called *spells* or divisions, two or three occasionally relieving each other at stated intervals.

The richness of flavour peculiar to this spirit, which has rendered it famous in almost all parts of the world, is supposed to be derived from the raw juice and the fragments of the sugar-cane, which are mashed and fermented with the other materials in the tun. The essential oil of the cane is thus imparted to the wash, and carried

* Edwards' History of the West Indies, vol. ii. p. 232, 233.

† Williams's Tour through Jamaica, 8vo. p. 6.

over in the distillation; for sugar, when distilled by itself, has no peculiar flavour different from other spirits. Time adds much to the mildness and value of rum, which the planters often improve by the addition of pine-apple juice.

To calculate the cost of rum to the sugar planter is difficult; in general, it is estimated that one-fourth of the entire produce of a plantation may in point of value consist of rum, and accordingly one-fourth of the expenditure may be taken as the first cost of the rum, and the remaining three-fourths as that of the sugar. Some say that the charge of making rum bears a similar proportion to that of home made spirits, but this is an erroneous assumption. Rum is made from the molasses or that part of the cane-juice which will not crystallize into sugar as also from the scum which is taken off during the saccharific process, and which in sweetness is equal to one-fifth of molasses. Let us take, as a standard, a distillery on a plantation producing 250 hogsheads of sugar yielding 15,000 gallons of molasses and scum equal to 5,000 gallons, netting in all 20,000 gallons of molasses. These would produce about 15,000 gallons of proof rum, which, when brought to the British market, would be reduced by the voyage to about 13,500 gallons, the average loss being ten per cent. These would cost the manufacturer throughout the islands from 1s. 4d. to 1s. 1d. per gallon, independent of all charges for puncheons, freight, commission, and other unavoidable expenses.

From this statement, it must appear that the distiller of rum has little or no profit, but being the grower of the material, and having his capital embarked in the trade, he is compelled to manufacture it from necessity, and the sooner he can turn the article to account the better he is enabled to bear loss and meet his engagements.

The average exports of rum from the principal islands, in 1787, amounted to 6,345,966 gallons. From Barbadoes, in the medium of eight years, from 1740 to 1748, the export amounted to 12,884 puncheons of 100 gallons each. In 1810, as appears from the Parliamentary reports, 3,428,452 gallons were exported to Great Britain from Jamaica alone, and in 1813, not less than 3,763,281 gallons.

In the island of St. Domingo, the juice of the cane is chiefly converted into sirup and afterwards distilled into *taffia* or rum, of which there is a very large consumption; it being the favourite liquor of the natives. In the neighbourhood of Cayes, on this island, there are eighty-one small distilleries, or, as they are termed by the inhabitants, *gueldiveries*, which consume about two millions of pounds of sirup, annually affording about one hundred and eighty thousand gallons of *taffia*, an inferior kind of spirit. Four thousand five hundred

hogsheads of this liquor, with six hundred hogsheads of rum of sixty gallons each, were made in 1826, most of the molasses having been purchased for the distillers; the proprietors of the plantations being generally too poor to erect distilleries. When this island was in possession of the French, the manufacture of sugar, both clayed and raw, was carried on to considerable extent: molasses was then a limited export. In 1789, there were 25,749lbs. of it shipped; in 1801, the quantity was 99,419lbs., while for the nine years previous to 1826, only once, (in 1822) were 211,927lbs. exported; the whole of the sirup being used in the manufacture of *taffia*.* The quantity of rum sent out of this island has always been limited; all that is now made is required for home consumption; but considerable quantities of wines, brandies, and beer, are imported from France;—Hock, Rhenish wines, and gin from Holland, with porter and cider from the United States. In order to form a correct idea of the extent of the rum trade of the West Indies, it may be sufficient to state that from the 5th of January, 1829, to the 5th January, 1830, there were exported to Great Britain and Ireland alone, 6,901,607 proof gallons, and in 1832, 6,934,759 gallons, a detail of which, as sent from each of the islands, will be found in a Table of the Addenda.

It has been calculated that the quantity of rum consumed in the United Kingdom amounted in 1800, to 3,049,590 imperial gallons, while the consumption of 1829 was 3,375,866, shewing an increase in the use of this spirit of upwards of ten per cent. Notwithstanding this increase, the planters complained of the distressed and almost ruinous state of the trade, alleging, that although they contributed considerably towards the revenues of the empire, and had important claims on the government, yet the consumption of home-made spirits was encouraged to a degree highly injurious to their interests. In 1829, there were 22,690,270 imperial gallons of British spirits consumed, while in 1800, there were only 5,386,313 used, thus showing in that period a preference to the use of the home-manufacture of 420 per cent., a measure calculated to bring destructive consequences on the West India planter.

The superior quality of the rum manufactured in the colony of Demerary has, it is thought, injured the demand for the rum of the islands. Its distillation, as appears from Bolingbroke, has been carried to a high state of perfection by the perseverance and skill of several scientific men, who have succeeded in causing the rum of Essequibo and Demerary to be as much in request in the American market as that of Jamaica is in England.

* M'Kenzie's Notes on Hayti, vol. ii. p. 160.

The following exports of rum, since the last establishment of the British custom-house on that settlement are thus recorded:—

	Punchs.	Hhds.
From the 1st October, 1803, till September 10th, 1804, ...	4,887	0
Ditto, 10th of September, 1804, till January 5, 1805.	504	0
Ditto, 5th January, 1805, till January 5th, 1806,	3,611	17
Ditto, 5th January, 1806, till January 5th, 1807,	4,722	17
Ditto, 5th January, 1822, till January 5th, 1823,	20,059	1839

The export from this colony into Great Britain for the year ending 5th January, 1823, amounted to 1,193,556 gallons; and for the year ending 5th January, 1829, to 1,358,458 proof gallons.

The produce expected by a planter in Demerary is at the rate of 80 gallons for every hogshead of sugar which his estate produces, each hogshead averaging 1200lbs. The rum made on a sugar estate is generally calculated to pay all its expenses.* In the West India islands also, it has been computed, that if a plantation be carefully managed, the sale of the molasses and rum together will defray the ordinary charges of the estate.

Besides rum, the beverages common to most Europeans are familiar in the islands. Hospitality is a prevailing characteristic of the inhabitants; and the practice of drinking is too often carried to excess. Most other liquors are preferred to new rum, which is considered very unwholesome, and is not unaptly termed by the inhabitants "kill devil." To its excessive use may be attributed the death of many brave men in our naval and military service. A seaman, says Bolingbroke, belonging to one of his Maiesty's ships, stationed in the West Indies, suddenly turned quite black in several parts of his body, and was evidently in a putrescent state. The surgeon requested leave of the captain to open and examine him, when a quart of new rum, nearly as clear as when first issued from the still, was found in his stomach, which had evidently caused his death.

Mr. M'Kenzie, during his residence in St. Domingo, remarked, that the victims to the climate were chiefly the crews of foreign vessels who made too great a use of new rum, which, with the climate itself, proved overwhelming.†

In a country where the heat of the climate must tend to relax the strength of the body, we need not wonder at the fatal consequences of drinking to excess: even at home we have too many deplorable

* Bolingbroke's Statistical Account of the Settlements on the Demarary, &c. 4to. p. 100.

† Notes on Hayti, vol. i. p. 14.

instances of a similar fatality caused by even a smaller portion of ardent spirits. Moderation in all situations is conducive to health, but in the warm regions of the tropics, where there are so many sources of disease, forbearance and caution are especially necessary.

The cultivation of sugar has been lately introduced into the island of Cuba; but, from the indolence of the inhabitants, it is very unproductive. In 1763, bees were introduced by emigrants from Florida, and they multiplied so much in the hollows of the trees that they soon obtained honey enough for their annual consumption. In 1777, they exported honey to the amount of 715,000lbs.

Madeira, claret, punch, porter, and cider, are favourite liquors in many of the islands, as also a drink, termed *Sangaree*, which consists of half Madeira and half water, acidulated with lime juice and sweetened with sugar. This drink is also in much request in New Gallicia, and other ports of South America. The ingredients in its composition are a mixture of wine, sugar, lemon-juice, and spices. The practice of partaking of these at all hours pretty generally prevails; even in the senate house at Barbadoes, the members drink punch. On one occasion, when Pinckard was there, two persons suddenly appeared with a large bowl and a two-quart glass filled with punch and *sangaree*. These were first presented to the speaker, who, after dipping deep into the bowl, passed it among the members. Nor were the audience forgotten, as it was considered to be correctly in order for strangers to join in this part of the debate.* The practice of late breakfasts in different parts of the West Indies, particularly in St. Domingo, has given rise to the introduction of wine and spirits at those meals, and a succession of excess in their use through the day has often been the consequence. Persons have been known to drink so deeply on those occasions as to be carried off wholely senseless, while the necessaries of life being procurable for a mere trifle, the lower orders are thereby enabled to indulge more freely in the luxury of their favorite drink, rum or *tafia*.

It is a custom in most of the West India islands to place on the side-board a capacious bowl of cold punch, to allay thirst during the heat of the day. To this a peculiar flavour is usually imparted by an infusion of the juice of the *acajou* apple.

In the island of St. Kitts, a drink called *Swizzle* is much used; it is a mixture of rum with about six times the quantity of water, rendered palatable by the infusion of some aromatic ingredients.

* Pinckard's Notes on the West Indies, vol. i. p. 469.

This beverage is often expensive, because water has frequently to be brought from the neighbouring islands, and sometimes rum and wine are given in exchange.

From the fruit of a tree called *Mamme*, or *Mamme-Sapota (Achras)* is made the highly esteemed cordial, *L'eau des noiaux*. This fruit the French term *L'apricot de Saint Dominique;* it contains two large stones, which are employed in giving spirits a ratafia flavour. The *Mamme* is a splendid tree, lofty, shady, and green, shooting up into a pyramidal figure, and producing only one large fruit in the year. If eaten raw, it is indigestible, yet it makes an exquisite conserve.*

When the negroes cannot procure rum, they make a fermented liquor from *cassada*, resembling beer, which in Barbadoes is termed *piworree*,† and in other places *ouycou*. This plant, the *manioc* or *mandioc* of America, grows to the size of a large shrub, or small tree, and produces roots somewhat resembling parsnips.‡ From both the bitter and sweet *cassada* a nutritious bread is made, which is thus prepared by the natives:—When the roots are washed and scraped clean, they are grated very fine and squeezed through a coarse bag or sieve, either of hair or hemp, into pot or stone vessel, and dried by a gentle heat, until the mixture becomes farinaceous or mealy. In this state it is fit for use, and is frequently made into excellent puddings; previously it is a deadly poison. From the roots a starch called *tapioca* is prepared, which is a profitable export to the Brazilians. In some of the islands, the juice expressed from the cassada is made into starch by the simple process of letting it stand until the heavier parts collect at the bottom of the vessel. The water being drawn off and the residue dried in the sun, the *tapioca* of commerce is produced.

The *ouycou* is sometimes brewed very strong, and it is considered both nourishing and refreshing. Molasses and yams are used in the preparation, and the liquor, after fermentation, is of a reddish colour. Great quantities of this beverage are consumed at feasts, of which we shall have occasion to speak hereafter. Anciently they had a liquor like the Mexican *Atolle*, which was of thick consistence, and composed of maize and flour seasoned with sugar and spices. The *ouycou* was made thus:—An earthen vessel, containing about sixty quarts, was nearly filled with water, into which were thrown two pounded roots

* West India Sketch Book.

† Vide Pinckard's Notes, p. 429.

‡ Robertson's Hist. America, vol. ii. p. 7.

of *cassada* with twelve sweet potatoes, a gallon of juice of sugar-cane, and a dozen of ripe bananas. The vessel being closed, the mixture was left to ferment for two or three days, and when completely attenuated, the scum was removed from the surface, and the liquor was then fit to be used. Though the material of this drink was said to be strong and exhilarating, yet it was considered inferior to *Maby* or *Mobby*, which is said to resemble French wine. The *Maby* is made by mixing about half a gallon of clarified sirup with about 30 quarts of water, twelve oranges cut into quarters, with a like number of red sweet potatoes. In about thirty hours after, during which it has undergone the operation of fermentation, it is ready for the goblet. This drink, as the name imports, is probably an imitation of the fermented juice of the *Mabal* palm found in the districts lying along the Congo, from which many of the negroes in these settlements have been carried as slaves, and no doubt brought the term with them.

The bitter cassada is poisonous when raw, but heat deprives it of that quality. Raynal asserts, that the cassada or manioc plant was originally introduced into the West Indies from Africa, and that the Indians were first instructed by the negroes in the art of converting the poisonous root into wholesome food. Edwards contradicts this, and shews from the first decad of P. Martyr, which bears date November, 1493, that the cassada furnished the islanders with the principal part of their food at the time when they were visited by Columbus, and long before any of the negro tribes were brought thither.*

The attachment of the aborigines to the pleasures of intoxication is well illustrated in the following circumstance, and shews that when drink could not be obtained to effect this delightful sensation, they had recourse to many subterfuges to supply the defect. Among others, the fumes of tobacco were a favourite substitute. These they exhaled through a tube formed like a Y, the two branches of which were inserted into each nostril, while the stem was embedded in a vessel of burning leaves. The vapour thus communicated soon affected the brain of the inhaler, and produced all the stupifying results and visionary pleasures usually ascribed to opium. This mode of intoxicating was often preferred to that excited by drinking, and so sudden were its consequences, that the stoutest individual has been prostrated in a few minutes. But since the introduction of distillation into these islands, forced methods of inebriation are seldom practised.

* Edwards' Hist. of W. Indies. Also Robertson's Hist. of America, vol. ii. note, p. 59.

In the Antilles, the vine never succeeded to any extent, but formerly the Spaniards resident in the north side of Jamaica, cultivated considerable vineyards, and made a good wine resembling claret. But the ease with which the wines of Europe can be procured, renders the cultivation of the vine for that purpose unnecessary. In many of the sugar plantations on the island of Jamaica, each of the negroes is allowed to take in calabashes about half a gallon of hot purified cane juice, which he sometimes ferments by means of the *chewstickwithe*, or chewed cane, making thereby a palatable kind of beer. At other times he uses it in the simple, unfermented state, to refresh him during the toils of the day. The overseer often carries a quantity of it in a bamboo staff, but more frequently substitutes rum in preference, and may be seen occasionally walking with one end of his cane elevated to the clouds, while he is regaling himself out of the other. It is a custom among the negroes here, which has been carried from Africa, to make a libation, or first-fruit offering, by pouring a little liquor on the ground before they drink any of it themselves, a practice also prevalent in several parts of Asia.

For a view of the extent and importance of the revenue arising to Great Britain from the rum imported from those islands, the reader is referred to that part of this work which treats of home distillation.

To enter into a detail of the value of rum as an article of consumption for the British nation, and the advantages which might arise from its unrestricted importation, would lead to the introduction of considerations foreign to the design of this work. But it may be observed, that a preference ought to be given to this article as exclusively the production and manufacture of colonies subject to our own laws and government, rather than to the consumption of foreign grain brought into Great Britain, and made into spirits at considerable expense, to the injury of our agricultural interests at home, and of those of our dependencies abroad.

Prejudices injurious to the West India planters have too frequently been formed from erroneous impressions of the condition of the slaves; and, therefore, a disinclination is manifested to encourage any branch of manufacture in which they are employed. But without in the most remote degree advocating slavery, which, in its mildest state, must always tend to the degradation of our species, it may be proper to shew that the manner in which the negroes are generally treated is different from what is commonly represented. Most of the regulations affecting the slave population are not determined by the will of the proprietor, but are settled by law and are calculated to promote the comforts of the slaves. They are either provided with provision

ground, which they are permitted to cultivate, or furnished with an equivalent in money or food. They are also clothed, and when ill, have medical attendance and medicine. When old, their infirmities are provided for by a sort of superannuation allowance, averaging ten pounds per annum. These regulations vary in different islands according to circumstances and localities, but all tend to soften the asperities of slavery. In many of the islands it is the practice to give each slave, in the morning before going to work, a cup of coffee, a glass of rum, or some other warm beverage, such as ginger tea; besides which he gets, once or twice a day, *weak diversion*, that is rum and water sweetened with molasses. That cruelties from harsh and brutal taskmasters have been inflicted on many of those unfortunate beings, there can be no doubt; but to brand all the planters with a savage barbarity and want of feeling, would be wanton and unfounded. Man here in a civilised state is not insensible to the feelings of humanity, nor does he act in opposition to those laws which regulate society in other countries.

Since writing the foregoing, slavery in the colonies has, by an act of the British legislature, been abolished; and it remains to be seen whether, under a different system of treatment, the condition of the Africans in the West Indies will be more conducive to their happiness by putting them on an equality with the intelligent and polished inhabitants of those regions.

The Church of England, the Wesleyan Methodists, and other missionaries have been, for some time, engaged among them in the inculcation of sound religious principles, which have for their object the fear of God, the love of their fellow-men, and a respect for the laws and regulations of civilized society. These, with the influence of the useful arts of agriculture, manufactures, and trade, must prove of the highest benefit not only to the well-being of the present generation, but to the descendants of those who have been emancipated from the thraldom of slavery.

On directing our observations to the American continent, we find that when the Spaniards first visited Mexico and Peru, the inhabitants understood the preparation of several intoxicating drinks procured from maize or Indian corn, from the *manioc* or roots of the *yueca*, and from the *agave* or *maguey*, a species of aloes. The Indian corn, when bruised and fermented into a kind of inspissated drink, was called *chica*,* and much resembled beer in its qualities. *Chica* is a generic term for any sort of inspissated drink, such as the juice of the grape simply boiled, or the liquor of the sugar-cane. Acosta is

* Skinner's Present State of Peru, 4to. p. 258.

of opinion that this word is of Haytian origin, as it does not belong to any known language in the Indies; the same observation applies to the word maize. *Chica*, denominated the nectar of the Peruvians, is made by pounding the maize into a fine powder and placing it in a heap, around which a number of females place themselves, and chew the material into a sort of paste. After chewing, it is taken from the mouth and rolled between the hands into round balls, which are placed in the form of a pyramid, like cannon shot in a fortification. This operation being finished, they are then baked over a fire and put into a certain quantity of water where they ferment and form the fluid now under consideration. *Chica* tastes like a mixture of table beer and cider. It is considered as nutritious as porter, and, notwithstanding the forbidding mode of preparation, is extremely grateful in hot weather, and not by any means prejudicial to health. During the time of the carnival, great quantities of *Chica* are consumed, as the people, on such occasions, are permitted to amuse themselves in various indulgences. Even females are often seen on horseback at full gallop, contending for no more than a draught of *Chica*. In Peru, is another kind of *Chica*, made from the *Algaroba* tree, accounted very pleasing, and of which the people are extremely fond. When taken moderately, it is considered wholesome, and conducive not only to exhilarate the spirits, but to strengthen the constitution.

No Irishman shews greater partiality for his native whiskey, nor indulges in it more freely, than the Peruvian does in his attachment to his beloved *Chica*. To make the drink from the *manioc* or *yueca*, the roots are boiled and bruised into a paste, which, as in the case of *Chica* from maize, the women, by the application of their saliva, convert into a fluid, called *masato*,* in the manner practised for a similar purpose by the inhabitants of Formosa, the South Sea islanders, and the Brazilians. This fluid is left for three days to ferment, which, by the infusion of some water, becomes a very powerful, intoxicating liquor. When strained, it is sometimes called *Kiebla*, and the spirit distilled from it *puichiu*. The Peruvians cultivate the *yueca*, and, in clearing the forests for that purpose, they use hatchets made of stone, resembling ours, but having, instead of a handle, two ears with a channel to secure the extremity by means of cords.† Temple mentions a singular superstition of the Peruvians, who, on one of their chiefs being slain, dipped pieces of the clothes of the deceased in his blood, and afterwards sold them to the women employed in making *Chica*, in order that these rags might be thrown into it on particular occasions to produce a

* Skinner's Present State of Peru, p. 380.

† Bonnycastle's Account of Spanish America, vol. ii. p. 189.

charm, when all the Indians in the neighbourhood, male and female, assembled to drink of this horrible beverage. At dinner parties, it is customary to have on a side-table several bottles of rum, spruce beer, and other liquors, with cakes and confections, of which the guests partake on entering the room. The same glass is used by the whole company, and it would be deemed uncourteous if any hesitated to drink after another. The more lips the glass has touched, the more friendship in the acceptance ; and should any individual from squeamishness look for a place that had been untouched, he would be treated with contempt by the rest of the company. When a lady honours a gentleman by drinking to him, he takes her glass and cautiously observes to place his lips on the very spot which she had touched with hers, and then drains the contents to the last drop. It is usual at parties, when the guests become mellow and a favourite toast is drunk, to shiver the glasses to atoms, implying that the subject is too good ever again to suffer the same glasses to be defiled by being made to contain a bumper to any less exceptionable sentiment.* The juice of the *Agave* is by the Peruvians fermented in the same way as in Mexico, where it is made into a kind of wine called *pulque* or *pouchra*, by others denominated *octli*. When Francis Pizarro had his first interview with the Inca Atahualpa, he was presented with a golden goblet of this wine. The Inca, holding a similar one in his hand, pledged him on the occasion of his visit, which he hoped would lead to the good of himself, his country, and his people. Pizarro observed that the inhabitants, at that time, understood the brewing of beer from oats, and found ale-houses established for its sale. *Pulque*, or *Pouchra*, is at present in great demand all over the South American continent, and the spirit extracted from it is known by the name of *Mexical*, or *agua ardiente de Maguey*, from the circumstance of its distillation having been first introduced at Mexico by the Spaniards. The manufacture of this liquor was prohibited by the Spanish government as injurious to the trade of their brandies ; but as it was a general favourite among the inhabitants, and smuggled to a great extent through the country, its distillation was at length publicly permitted on the payment of a certain duty.

In the *Theatro Americano*, published at Mexico, in 1746, it appears that 161,000 peros were raised by the tax on *pulque*.† The consumption of this liquor, in 1791, amounted to 294,790 cargoes, that of wine and vinegar to 4,507 barrels of $4\frac{1}{2}$ arobas, and 12,000 barrels

* Temple's Travels, vol. ii. p. 311.

† Robertson's America, vol. iii. note, p. 196. Bonnycastle's Account of Spanish America, 8vo. vol. i. p. 63.

of brandy. Since that period, wine is much more in use, and of *pulque* the enormous quantity of 44 millions of bottles, each containing 58,141 cubic inches, have been annually consumed.

When Humboldt visited New Spain in 1804, the cultivation of the *maguey* had become of great im portance to the exchequer. The duties of entry on this article paid in Mexico, Puebla, and Toluca, in 1798, amounted to 817,739 piasters, or £178,880 sterling. The expense of collection was 55,608 piasters, and the net profit to the crown was 761,131 piasters, or £166,497. The entire revenue derived from the fermented juice of the *agave*, through the whole of New Spain, is said to exceed 800,000 piasters; but it must be considerably greater, since a late writer computes the annual consumption in the city of Mexico alone at 1,000,000 of piasters. The houses in that capital, for the sale of it, have of late become so numerous, that the police, to check the great irregularities which they occasion, allow them to remain open no longer than from ten o'clock to four in the day.* This drink is allowed to enter the city only by one gate, that of Guadaloupe; and a similar regulation prevails in most of the other cities of New Spain.

Large plantations of *maguey* are now under cultivation, both by the natives and Spaniards; and the mode of conducting the crops is thus described:—

The plants are set about nine feet asunder in rows, and require little attention until the season of flowering, which has been averaged at a period of ten years. In a plantation of 1000 aloes, it is calculated that about 100 are in flower every year. The Indians know the exact time at which the stem or central shoot, from which the flower springs, is about to appear, when they instantly cut out the whole of this stem, leaving a hollow or cup, formed by the rind, a foot and a half in diameter and nearly two feet in depth. This is covered with leaves, and the juice, which otherwise would have served for the nourishment and support of the central stalk, flows into this cavity, and in such quantities as to require its removal two or three times a day. This sap is called *aguamiel*, or honey-water, from its ropy or honey-like taste and consistency. A thriving plant yields from eight to fifteen pints of this sap in a day. The exudation continues two or three months, and each plant produces on an average about 150 quarts annually. Great judgment is required in extracting the central portion of the stem which bears the flower, for, if the operation be made either too early or too late, the plant is wholly destroyed and rendered unproductive.

* Bonnycastle's Account of Spanish America, vol. i. p. 63.

A mistake prevails in Europe respecting the time which the *aloe* or *agave* takes to flower, which is said to be but once in a century; but we find that on the American continent, it blossoms after the date of its being planted in a period varying from 8 to 18 years. The plant is composed of a number of strong indented leaves at the base, of from five to eight feet in length, with a stalk twenty-five feet high, having twenty or thirty branches diminishing in proportion as they are elevated from the base, and form a kind of pyramid bearing a greenish yellow flower, standing erect in thick clusters from every joint. Such is the majestic appearance of this plant, if undisturbed, and it continues to produce these flowers for upwards of three months successively. But it is at the critical moment that the central or flower stem is about to appear that the ingenious planter extracts the heart or central portion of the stalk, when, instead of an immediate efflorescence, a flowing of juice commences and continues during the period that the plant itself would have been ornamented with blossoms. Annexed is a representation of the *agave* in the state at which the juice is collected, with the skin, scraper, and gourd: the latter of which has its smaller end terminated with a horn, and is used by the planters in the same way as brewers in Europe take samples from the bungs of beer or porter barrels.

In the preparation of the *pulque* from the juice thus obtained, no barm or yeast is employed to cause fermentation. A quantity of the sap is allowed to stand in a vessel for ten or fifteen days, in which time it ferments and is termed *madre pulque*, or the mother of *pulque*. This is distributed in small portions into the troughs or skins along with the *aguamiel* to excite fermentation, and in twenty-four hours after, the *pulque* is finished and in the very best state for drinking. The Mexicans attribute to *pulque* the same virtues that the Irish do to whiskey. Europeans dislike it at first from its heavy smell, somewhat like sour milk or slightly tainted meat; but in a little time, when this disagreeable flavour has become familiar, it is esteemed both a wholesome, cooling, and nutritious beverage, being always drunk in a state of effervescence, and no bad effects arising from its slightly intoxicating qualities. Some plantations of *agave* have been known to bring in upwards of £1,666 annually.

It is surprising that in a country where heat is excessive and water scarce, that some better and speedier mode than that of conveying this drink to the great towns in skins on the backs of asses has not been adopted. By this means much time is lost and the liquor suffers in flavour, becoming heavy in the smell, and its freshness and cooling properties are in a great measure destroyed. Writers differ as to the cause of the fœtid odour of the *pulque*, some attributing it, as already stated, to the skins in which it is conveyed. Others say that it has the same disagreeable flavour when preserved in vessels. "Perhaps," says Humboldt, "the odour proceeds from the decomposition of a vegeto-animal matter, analogous to the gluten contained in the juice of the *agave*." In some parts of Mexico, there is a species of the *maguey* which is inferior to that in the vicinity of the capital, as just described. No *pulque* is made from it, but it is distilled into a strong spirit called *Chinguerite*.

The utility of the *agave* or *aloe* plant is not restricted to the production of *pulque*, but its leaves and fibres have been converted to many useful purposes. The Aborigines used the leaves, after a certain preparation, as a substitute for paper on which their hieroglyphics were written; and pieces of it are still to be found in the country resembling pasteboard, and some like Chinese paper. A durable good sort of twine is manufactured from the fibres and twisted into ropes, which are in great demand in the mining districts, and sometimes employed as cordage for shipping. This is known in Europe by the name of *pite thread*, and preferred by naturalists to every other, as it is not liable to twist. The plantations of *maguey* or agave are very profitable, and, as the plants are propagated with great ease and facility, many are engaged in its cultivation, from which an income of

from 10 to 12,000 dollars has been annually derived by one individual. This plant requires little or no water, and, although the parent one withers as the sap is exhausted, a multitude of new suckers spring from the root, and, when transplanted, more of them supply its place. The length of time that must elapse from the first laying down of a plantation till it begins to prove productive, which, as already stated, is from eight to eighteen years, proves a great drawback and discouragement to agriculturists. But, when once a good establishment has been effected and matured, the proprietor is soon amply repaid for his toil, as, henceforward, there is an annual succession of plants to afford a constant supply for the market. A planter, who lays down from 30 to 40,000 plants, is sure, according to Humboldt, to establish the fortune of his children. The same writer thinks that the agave used for distillation is different from that used for pulque, although the produce of both is occasionally subjected to distillation, and the brandy made from them is very intoxicating. It is worthy of remark, that the juice of the agave, before the period of its efflorescence, is very acrid, and is successfully employed as a caustic in the cleansing of wounds ; or, if the leaves are bruised and boiled, they produce a balsamic sirup used to cleanse and cure ulcers. The prickles which terminate the leaves served formerly like those of the *cactus* for pins and nails to the Indians. The Mexican priests pierced their arms and breasts with them in acts of expiation, analogous to those of the Budhists of Hindostan.

If proper attention were bestowed on the distillation of pulque, it would yield an excellent spirit ; but many obstacles have been raised against this measure by the rapacity of the Spanish merchants. These gentlemen, at one time, carried their efforts so far as to solicit the government to extirpate the plant altogether, but as the country has passed into more liberal hands, a better order of things may be expected to arise, and in the course of some time, the spirit of the *maguey* may be brought to rival the brandies of Europe. As it is, pulque-brandy forms a considerable branch of the trade of the provinces, through which it is transported in leathern bags on the backs of mules. Whether, however, the use of this liquor, generally speaking, may not be of more injury to the morals of the people than the good it would produce either in an agricultural or a commercial view, is not here a point for discussion ; but the ease with which intoxicating liquors are procured by the Indians of New Spain tends much to shorten their lives and demoralize their characters. Rum, spirits from maize, and the root of the *jatropha manihot*, with pulque, are the favourites. Pulque, when not subjected to distillation, is nutritive on account of its saccharine nature, and hence those who are addicted to

it use little solid food; used moderately it is nourishing and healthy. Among those who inhabit the valley of Mexico, the environs of Puebla and Tlascala, or wherever *maguey* or agave are extensively cultivated, drunkenness is most predominant. In the city of Mexico, tumbrels are sent round to collect the drunkards of the night who may be found lying in the streets. They are carried to a watch-house in the morning, and an iron ring is closed round their ankles, and in this state they are compelled to cleanse the streets for three days successively, as a punishment for their irregularities*—a policy of proceeding that does credit to the government.

The sugar-cane is also productive; and in Mexico, as well as in some of the other principal districts and towns, sugar-mills and distilleries of rum on a large scale are kept at work. The cultivation of the cane has become a matter of great importance in New Spain. When Humboldt was there, the exportation from Vera Cruz alone was 13,793,750lbs., valued at £312,525, which has since considerably increased. Little is now exported to Peru, as that country produces more than sufficient for its own consumption. Some of the plantations in New Spain are known to yield from 1,103,500, to 1,655,250lbs. of sugar annually. The quantity and quality of the produce have been found to be in proportion to the nature of the soil, and the elevation of the land on which it is cultivated. Such is the fertility in some parts of the torrid zone in America, that it has been estimated that all the sugar consumed in France, say 44,140,000lbs. might be produced on a surface of seven square leagues, an extent, according to Humboldt, not equal to the thirtieth part of the smallest department of France. The chief bulk of the sugar of New Spain is consumed in the country, which has been calculated at 35,000,000lbs. annually. In most of the plantations, rum is distilled from the molasses and the refuse of the mills; and it forms no inconsiderable portion of the beverages of the country. From the molasses of a sugar plantation, 30,000 barrels of coarse rum are made yearly, and the speculation in this kind of trade is found to be lucrative, as the barrel of rum sells in Mexico for 32 dollars, netting, after paying duty and carriage, 24 dollars.

Vines are cultivated in these settlements to great extent, and the wine in some places is not inferior to the best Spanish wine. In the environs of *Passo del Norte*, the vineyards produre such excellent wines, that they are preferred to those of Paras, in new Biscay, so much celebrated as being the produce of the *Vitis Vinifera* of Asia,

* Humboldt's Political Essay on the Kingdom of New Spain, vol. i. p. 150.

planted there by the first settlers. Under the old government, the vine could hardly be included among the territorial riches of Mexico, the quantity being so inconsiderable. But the political changes which have taken place in that country, have given encouragement to the plantation of the vine and the consumption of native produce, unshackled by the prohibitory and tyrannical laws of the mother country. The inhabitants of Mexico and New Spain will soon be enabled to supply not only their home consumption, but that perhaps of the whole of North America; and Mexico may yet serve to that portion of the globe, what France, Spain, Portugal, and Italy, have long proved to the rest of Europe.

In so extensive a region as that of New Spain, where the heat is intense and drink in great demand, ice is considered indispensable and an article of great luxury. The right to sell it was a monopoly of the crown, and the poor Indian, who had scaled the summits of the highest mountains to collect this important material, could not dispose of it without paying a duty to the government. Humboldt informs us that a similar monopoly existed in France, to which a stop was put, as the magnitude of the duty produced a rapid diminution in the use of cooling liquors. The sale of snow in New Spain amounted, in 1803, to 26,000 piasters.

To enter upon a minute detail of the vegetable productions of Mexico would be irrelevant to this work and extend beyond its limits. It is sufficient to observe, that the gardens contain all the fruits of Europe, and the fields are cultivated with various sorts of grain. The food of the people is chiefly composed of banana, manioc, maize, wheat, potatoes, &c. The *maguey*, or *agave*, may be considered as the Indian vine, which forms the basis of most of their beverages. In some places a drink is used called *pinòle*, which is Indian corn baked, ground, and the flour mixed with either milk or water, having a little cinnamon or sugar superadded. Maize is cultivated to the utmost extent, and with a success hardly credible. The majority of the population of New Spain subsisted entirely on the flour of the maize; it is used in various ways, and is eaten boiled or roasted. When made into bread it is very nutritive, and it is often used under the form of a gruel, called by the natives *atolle*, with which are mixed sugar, honey, and often ground potatoes. Hernandez describes sixteen different sorts of *atolle*. Maize is sold cheap; even in the capital it is bought for two dollars the fanega of 150lbs. At present, a very palatable kind of beer or fermented liquor is made from this grain, as well as from the stalks denominated *pulque demaize (tlalli, tlaolli)*, and which

is composed of a sugary juice or sirup, extracted by pressure from the stalk. This compressed juice was formerly substituted for sugar.* The Mexicans and Peruvians, previous to the arrival of Europeans among them, were in the habit of pressing sugar from the stalks of the maize, and were able to concentrate its juice by evaporation, as well as to prepare the coarse sugar by condensing the sirup. Cortez described to the Emperor Charles V. the Mexican sugar which he saw exposed in the markets for sale, as "honey from the stalks of maize and honey from the shrub maguey." The stalks of the maize are so exceedingly sugary, that Humboldt says the Indians suck it as the sugar-cane is sucked by the negroes, and it appears that they were unacquainted with the sugar-cane previous to the landing of the Spaniards.

The Mexicans domesticate bees for the purpose of obtaining honey. As the insects are naturally prone to construct their cells in the hollows of trees, the inhabitants excavate the trunks in portions of from two to three feet in length, which they close at both ends with clay, and bore a hole in the centre for the egress and ingress of the bees. These receptacles are then suspended on a tree in a horizontal position, and are soon occupied by an industrious colony. The honey-comb is so constructed, that it is unusual to have recourse at any time to the destruction of the inmates; all that is necessary being to remove the stopper, introduce the hand and withdraw the honey-sacks, for the Mexican bee forms cells for the reception of the larvæ, distinct from the combs. The hive generally affords two harvests in the season. The honey is of good flavour but thin; it is inferior to that of Europe, and not easily fermented; yet a good description of hydromel is occasionally made of it, and much used in the country.†

The maguey is very common in Peru, a country susceptible of cultivation in such parts only as lie adjacent to the rivers, or which can be conveniently irrigated. It makes a good hedge in consequence of the strong prickles on the edge of its leaves, which prevent animals from passing. The Indians build their houses of its flower stalks and cover them with the leaves; the fibres are converted into thread and woven into clothing, while the prickles serve in the place of pins and needles. The juice, when mixed with water, is allowed to ferment, and forms a similar beverage to the Mexican *pulque*. Its leaves supply the place of soap, for after the clothes are wetted, if they be beaten with a bruised leaf of maguey, a thick white froth is produced,

* Ward's Mexico, (1827), 8vo. vol. i. p. 41, passim.

† Beechy's Narrative of a Voyage to the Pacific Ocean, vol. ii. p. 357.

out of which, when the clothes are rinsed, they become perfectly clean: even the flower buds, when boiled or pickled, are delicate eating. Of the two varieties of maguey found in Peru, the leaves of the one are of a deep green, while those of the other are of a beautiful pale green; but the latter is the most useful.

The soil of Peru, though unfavourable to the growth of vegetables, yields crops of potatoes, wheat, and rice, which, with the sugar-cane and vines, are reared chiefly on the banks of ravines where vegetation is extremely rapid. The grapes are highly flavoured but afford indifferent wine: notwithstanding, this article, as well as brandy, has been for many years of some commercial importance. Pisco has long been famous for its manufacture of brandy. Near the city of Conception de Mocha, the vine-yards are numerous and fertile, producing a large supply of wine for home consumption, as well as for the Lima market, the cultivation of the vine not being forbidden here, as it is in Mexico and New Granada. For want of proper vessels a large quantity is either lost or injured; and a wine is made called *Muscadel*, superior to that of the same name in France, and not inferior to *Frontignac*. The simple vessels used at this place to ferment and preserve the wine are made of baked clay, having only a wooden cover, and hence their brandy is greatly deteriorated. The vines grow chiefly on espaliers, and are not on detached stems as are the generality of European vines. The wine and other liquors are carried in goats' skins tanned for the purpose. These animals are carefully nurtured for this object, as well as for their fat and for cordwain. A palatable species of red wine with a flavour peculiarly aromatic, and denominated *Malle*, is here prepared from the berries of a tree of that name. These berries are black and formed in clusters round the slender branches, being about the size of peas. Another beverage called *Theka*, is made from the fruit of the *mague* tree, and which somewhat resembles a wild cherry. It grows in the woods in great abundance, and the people make parties to gather it. From the city of Conception, there are exported, at an average, 2,000 jars of wine containing 18 gallons each, chiefly to Lima, where Chili brandy may be had at a very reasonable rate. About Lima, a great portion of the native sugar is employed in making a drink called *guarapo*, which is the expressed juice of the cane fermented; it is the principal drink of the coloured people, and of which the Indians of the interior purchase great quantities, it being sold very cheap. Europeans consider this an agreeable beverage, and when thirsty or heated, it is preferred by many to every other sort of liquor. The Spanish monarchy, in conjunction with the Pope, prohibited the manufacture of rum among the

Peruvians under heavy penalties, in order to secure the monopoly of making spirits to the proprietors of vineyards, which privilege was, however, attended with weighty exactions and imposts.

About 150,000 gallons of brandy are annually made at Pisco from the vines in that neighbourhood. It is usually kept in jars in the form of an inverted cone, the insides of which are coated with a species of naphtha, and usually contain 18 gallons each. Pisco brandy is well flavoured and tinged with colouring matter as in France. That termed *arguardiente de Italia* is of a mild nature, possessing a flavour like Frontignac, and therefore much valued. Owing to the trade in brandy, little wine is made, and that even of an inferior character, as it is too thick and sweet to be esteemed, which is attributable to the practice of boiling the grape, a considerable time before it is fermented. There is in the neighbourhood of Pisco, a remarkable vineyard called *de las hoyas*, formed in the pits and holes which were excavations originally made by the aborigines in search of water for irrigation. Here the vines produce in great abundance, requiring no care save that of pruning, for the branches are allowed to stretch along the sands without any other support or protection.

Cider is very common in Peru, and is made in the following manner:—The women, after gathering a quantity of apples from the woods, place them in a kind of trough formed by scooping the trunk of a tree. They are then beaten until they become soft, when a female presses them with her hands, and the juice is collected into large gourds, calabashes, or prepared goats' skins.* It is then poured into earthen jars, some of which contain upwards of 1,000 gallons, and left to ferment. This cider is usually drunk out of horns, and sometimes to excess. Any redundance of this liquor is carried by the Indian women into the neighbouring towns, and sold under the name of *chica*. From a species of myrtle berry called *mutillas*, which is about the size of a pea, of a deep red colour and aromatic flavour, the Indians prepare a pleasant beverage called *chica de mutilla*. This is effected by breaking them down in water, and allowing them to ferment for a few days. Some wine and a bad description of brandy are made from the wild grape of the country. Great quantities of drink are consumed at the marriages and festivals of the Indians, to

* In Peru there are many varieties of the gourd. Of the white flowered, generally called calabashes, there are twenty species, of which two are sweet and eatable. The bitter kinds are remarkably serviceable when dried, as the shells serve for dishes, bowls, plates, bottles, tubs, trays, barrels for water, and baskets for fruit, butter, and eggs, and are often cut, stained, and bound with silver.

the amount, sometimes during a feast, of 1,000 jars, each containing 18 gallons. Even on the tomb or grave, liquor is poured by the relatives of the deceased, as the last token of respect at the interment. At the anniversary of a Saint, an Indian gives an entertainment to all who choose to enjoy it; when calabashes of *chica*, some holding five or six gallons, are placed before the guests, with a number of smaller ones, each containing about a pint. After the first course, the *chica* is circulated freely, as well as during each successive remove, and when about to depart, the *stirrup* cup is demanded, much like the parting glass of the Irish, called *deoch-a-doras*.

Another curious practice among the Peruvians at their festivals, is when at that stage of the repast where the women hand the small tutema shells full of masato to the men; all rise, and holding the cup to the mouth, turn the head to the right and squirt the fluid through the teeth as an offering to their departed friends, and afterwards resume their seats. The same ceremony is again repeated as a propitiatory offering to the aerial spirits, that they may protect their property from the attack of wild beasts or the destructive influence of the elements. The palm in Peru, as in other countries, adds a luxury to the table. The leaves and stem, to which the nuts are attached, yield by boiling an agreeable beverage, which, after fermentation, acquires a delicious flavour and vinous quality.

Large quantities of maize are, in various parts of Peru, converted into *chica*, and it is remarkable that the grain used in all such cases has been made to undergo the process of malting, a proof that the making of malt must have been known to the Peruvians from the most remote period. In making *chica*, no other ingredients are mixed with the malted maize, called *Jora;* when sufficiently boiled in water, the fluid ferments like our ale or porter, and the produce is very intoxicating. In some places, the natives believe that fermentation will not ensue if the malted grain be not previously subjected to mastication. From this circumstance, many old men and women assemble at the house where *chica* is to be made, and are employed in chewing the *Jora* or malt. Having masticated a sufficient quantity, they lay the chewed substance in small balls on a calabash. These are suffered to dry, a little after which they are mixed with newly made *chica* while it is warm. On account of a prohibition, no distillation of this article is carried on. The consumption of *chica* in Peru is very considerable. In making one sort of it from the grape, two or three hides are fastened together in the form of a large sack, suspended by posts, and into this bag the grapes are thrown. They are then trodden by a man, who is, during the

process, often immersed to his shoulders, and occasionally relieved by another. All the time the juice is running through a small leathern tube placed at the bottom, and one is constantly employed carrying a fresh supply of grapes which he throws into the sack till a sufficient quantity of *chica* is manufactured. Another kind of *chica* is made from the pods of the *Algaroba*, a sort of Acacia, by infusing them in water, straining them, and allowing the residue to ferment. At the end of three or four days it is palatable, and it is thought it would produce a delicate species of wine. Two kinds of chica are usually made from the same grain: one is called *cluro*, the water in which the malt has been infused. This, when drawn off, is afterwards boiled, and has then some resemblance to cider. Another is made by boiling the grain with water for several hours, after which it is strained, fermented, and termed *neto*. The sediment is used as a kind of yeast in making bread. The great antiquity of this beverage is proved, beyond all doubt, to have been familiar among the aborigines before they were visited by the Spaniards, as Mr. Stevenson affirms that he drank chica that had been found in the *huacas*, or burying places, where it must have remained upwards of three centuries. This chica must have been of a very strong quality to have preserved its strength so long, particularly without hops or other antiseptic ingredients. In some places, *chica* is made so strong, that from three bushels of *jora* only 18 gallons are obtained.

The Peruvians are not habitual drunkards, although they sometimes indulge themselves beyond what prudence would dictate; and a late respectable writer assures us, that, during twenty years' residence amongst them, he never saw a female intoxicated. In Quito, rum and brandy are most in consumption. From the rum distilled here, a variety of liqueurs are made, but the lower orders prefer chica from the maize, and in order to excite thirst or increase appetite, an Indian will sometimes swallow 20 or 30 pods of capsicum or pepper, with some salt and bread, washing them down with two or three quarts of his favourite beverage. Here, in the manner of the Mexicans, delicate ices and ice beverages are made; and at entertainments, ices are the greatest ornaments of the table, appearing under every form and representing fruit of all descriptions so nicely delineated, that, when mixed with real fruit, they cannot be distinguished from it.

The *Masato* used by these people is a drink made by boiling a quantity of ripe plantains, till they are quite soft, after which they are reduced to a pulp by beating them in a trough. The matter is then put into a basket lined with leaves, where it is left to ferment for

some days. When about to be used, it is put into a fruit-shell or perforated vessel, to which a quantity of water is added; the whole is compressed, and the filterings are collected in another vessel and drunk with much pleasure; the taste, though sub-acid, is very agreeable.

In parts of Peru, the natives distil rum from the sugar-cane in a very simple manner. After the juice has been sufficiently fermented, it is put into a deep earthen pot having a hole in the side near the top through which passes a wooden conductor with a groove or duct in the handle. To the top of the pot a pan is luted with clay, constantly full of cold water, serving as a condenser and causing the spirit to fall into the spoon, it flows along the groove into a bottle which serves as a receiver for the spirit.

This apparatus seems to be peculiar to the Peruvians, and would lead us to suppose that distillation was in some degree known in the New World before the intercourse with Europeans; and we are told that the Peruvians had discovered the art of malting before that period, and the *Sora*, a kind of beer, of a very intoxicating nature, was made from it and prohibited by the Incas, because it intoxicated sooner than the other liquors of the country. It is not improbable that this *Sora*, as well as the *Vinafer* spoken of by Garcilaso de la Vega, might have been a distilled liquor. This conjecture is the more reasonable when we take into consideration the advanced state of civilisation among the Peruvians, and the monuments which still remain as specimens of their industry and art. One of these in particular, the great road from Cusco to Quito, a distance of 700 leagues,

is not to be surpassed by the labour of man, except by the great wall of China.* Even the ruins of their temples evince such elegance in architecture, that the very interstices of the stones are scarcely perceptible. From an infusion of ripe bananas in water, spirits are distilled; after the infusion has fermented, it is carefully strained before the process of distillation, by which means the spirit is protected from any empyreumatic flavour which might arise from the sediment.

Chili is in fertility not inferior to any part of South America, and is peculiarly adapted to European productions, as the corn, wine, and fruits that flourish there sufficiently prove. In many parts the wine forms a chief article of culture, and is planted in rows as at the Cape of Good Hope, the plants being supported at intervals only as occasion requires. The wine-presses in general use are similar to those of Spain, and the wine itself is stored in capacious cellars, in jars termed *batejas*, each holding a quantity not less than a tun. Brandy is distilled not only from the lees but from the inferior wines; both articles are transported in skins carried by mules to the neighbouring provinces, as well as to Lima and to other cities, where they are sold at a very moderate rate. At St. Jago, Valdivia, and Valparaiso, wine can be had for three half-pence and two-pence the bottle. Captain Hall observed, during his residence in Chili, that the natives seemed to be well supplied with a good description of *agua ardiente*, which was drunk after being made into punch; and that it was customary to have at dinner a copious bowl of this beverage, out of which, in common with wine, the guests pledged each other and toasted their sentiments.†

Notwithstanding that *agua ardiente* not only abounds here but in the other states of South America, it does not appear that the distillation of any kind of spirit was known before the discovery of this region by the Spaniards; for although we find in their arts considerable ingenuity and progress in civilisation, yet none of their inventions seem to have extended so far as a chemical preparation of intoxicating liquors.

Ovalle, in his History of Chili, says, that grapes were so plentiful in 1646, that they could not be disposed of; and the wine was a source of great injury to the Indians by their drinking it to excess. White wines were made from that species of grape called *Uba Torrontes* and *Albilla*, which were much valued; red wines were made from the ordinary grape and a species called *Mollar*. The bunches

* Some parts of this road being conducted across the Cordilleras, are at the astonishing elevation of 12,475 feet above the level of the sea.

† Hall's South America, vol. i. p. 180.

of grapes, he says, were enormously large; and he mentions one that filled a basket, and served as a meal for a numerous convent of friars. The branches of the vine he describes as very large, and the trunks of the trees as thick as a man's body.

Although the Chilian vines have been very productive; yet, from some cause or other, they do not rank very high. The *vino de penco* made near Conception, on the banks of the Itali, is most in esteem, and in taste and flavour it resembles Malaga more than any other. When Captain Beechey, in 1825, touched at this place, he found the wines greatly deteriorated, and the only palatable wine which he could procure was that made from the grapes on the estate of General Friere.*

From the borders of Peru to the river Maule, the mode of cultivating vines is by raising the sets to the height of three or four feet by means of props or forked stakes. Beyond that river, they are planted on the declivities of hills and reclined on the ground. The vintage usually occurs in the months of April and May.

The lower orders of the Chilians have little inclination for wine, their drink being chiefly water and *Chica* made from the grapes, (which abound in the woods where the birds deposit their seed,) by pressing out the juice and boiling it, without reference to fermentation. From the variety and luxuriance of the fruits such as quinces as large as a man's head, peaches weighing upwards of a pound, with apples, pears, oranges, lemons, and citrons of the finest description, valuable domestic wines might be procured. Even from the fruit of the *myrtus luma*, a species of myrtle which frequently grows to the height of 40 feet, a pleasant wine is made, which is a good stomachic, is held in high estimation, and by strangers is often preferred to Muscadel. From the fruit called *quelu*, which is very sweet, small, and of a colour between red and yellow, a very palatable drink is drawn: from *Molle*, another fruit of the shape and colour of pepper, is made a drink termed *Huigan* by the natives and *Molle* by the Spaniards. This liquor is very agreeable, and in great request by people of respectability. Of *Molle* there are two kinds, the common *(schinus mollis)* is usually found in the marshes, and the other is termed *schinus huigan*. From the berries of these, a kind of red wine of an agreeable flavour, but very heating, is prepared. The Indians manufacture a beverage from those berries as strong and as pleasant as wine. Antonio de Herrera describes a beverage of a bright golden colour made from the fruit of the Murtilla-tree, which strongly resembles the grape. This liquor is

* Beechey's Voyage to the Pacific, 4to. vol. i. p. 29.

warm, very agreeable to the taste, and highly salutary, as it increases the appetite, and never produces any painful consequences to the head, though it bears a greater proportion to water than wine does. From the grain of *quinua* (a species of *chenopoduim* from three to four feet high,) a very pleasant stomachic beverage is made. From the berries of the *maqui* (*cornus Chilensis)* a species of wild grapes which are very pleasant for eating, the Indians prepare a liquor, termed *theca*, which is held in considerable estimation and is common in Peru.

The aboriginal Chilians, long before the landing of the Spaniards, employed leaven in making bread, and they were, besides, acquainted with the process of fermentation, by which they obtained from their grain and fruits, several kinds of inebriating liquors which they kept in jars after the manner of the Greeks and Romans. From the clay of the country they made every species of vessel suited to domestic purposes, well glazed, and polished by a mineral varnish called *colo.* Wooden vessels were also common, and even vases of marble of excellent workmanship. According to Don Ulloa, the *guaqueros*, or drinking vessels of the inhabitants of Quito, were of a very fine black earth, and the place at which they were originally formed is unknown. In shape they were round, having a handle in the middle with the mouth on one side, and a representation of an Indian's head on the other, whose features were so naturally expressed, that few workmen of the present day could surpass it. Besides these, he adds, that various sized vessels made of red and white earth were found among the cemeteries of the aborigines, for the purpose of making and preserving the *chica.* Lane, in his account of the modern Egyptians, says that he saw in the tombs at Thebes, many similar jars containing the dregs of *Bousa.** Some of the native Chilian earths have such peculiar quality that the vessels made of them are said to communicate an agreeable flavour and smell to the liquors they contain. Some of these vessels are handsomely ornamented with plants and animals, and bring a great price in Peru and Spain.

At the interment of the dead, great quantities of *chica* are consumed, first in the entertainment of friends, and afterwards when they arrive at the grave-yard. Here both provisions, and vessels filled with *chica* and wine, are placed beside the corpse with a view of sustaining it during its passage to the other world. Besides these, the mound raised over the dead body is moistened with a quantity of *chica,* as a libation to the memory of the departed. The attachment of the people to fermented liquors is such, that they consider every

* Lane's Account of the Modern Egyptians, &c. 2 vols. 8vo. vol. ii. p. 34.

entertainment a mockery unless they have abundance to drink; yet, generally speaking, their habits are temperate.

The aborigines use beer and cider as their common beverages, which they make from Indian corn and apples; yet they are extremely fond of wine, which they procure from the Spaniards. At their banquets, at which it is common for 300 persons to be present, more meat, grain, and liquor are consumed than would be sufficient to support a whole family for two years. These feasts are called *Cahuin*, or circles, from the company seating themselves in a circle around a cinnamon tree.* No entertainment, however, of any sort is considered worthy of the name of a feast, unless there is drink in abundance.

At Potosi, wine is seldom used except at great dinners. Claret rates at 12s. the bottle; Champagne from 12s. to 16s.; English cider from 6s. to 8s. At Cinti, about 40 or 50 leagues from Potosi, a good wine is made which is sold from about 2s. to 2s. 6d. the bottle, and which is said to resemble Burgundy. Rum and brandy sell from 8s. to 10s. the bottle. The cultivation of the vine and wine-making might be a speculation useful in many parts of South America. In the province of Tarija, good wine is produced little inferior to Burgundy. In the vicinity of San Lucas, fine wine and brandy are made, even to the extent of exportation, and after leaving this village and entering the valley of Cinti, it is a continued vineyard for nearly twenty leagues. This place is celebrated for its wines and brandies which are in great demand and sent to all the upper parts of Peru: wine is sold at 1s. 3d. per bottle.

The genial warmth of the climate and soil in the valleys and plains under the Andes, are particularly favourable to the growth of the vine. Some of the vineyards, especially those in the vicinity of Mendoza, are said to contain 60,000 plants. The grapes are large, black, and highly flavoured, resembling the Hambro species more than any other. A duty of one dollar is imposed on every cask of brandy, and four reals on every cask of wine. The wines and brandies of Mendoza, San Juan, and Rioja, make their way to the Rio de la Plata to the extent of 12,000 barrels annually, where they are bartered for English merchandise, besides which, large quantities are sent to Potosi, Santa Fe, and other places. In transporting these over the immense plains of the Pampas, oxen and mules are employed;† the former, to the number of six in a wagon, travelling about eight leagues in a day; and the latter laden with skins in pack-

* Molina's History of Chili.

† Vide Account of the United Provinces of Rio de la Plata, from the Spanish, 8vo. 1825.

saddles, travel in troops together at the rate of ten or twelve leagues a day. At night their saddles are carefully placed in a circle in which the muleteers make a fire and repose themselves after the fatigues of their journey.* While treating of the Pampas, the method of preserving the grain, as resorted to by the inhabitants, is so curious as to be worth relating. The entire skin of an ox is taken, the legs are sewed up, and the whole is filled with corn. It is then suspended between four stakes, the legs hanging downwards, so that it has the appearance of a living animal. In this state, it is covered with hides to prevent rats, birds, or vermine getting at it, as well as to preserve it from any external injury.

The province of Paraguay consists chiefly of extensive prolific plains. Among their vegetable productions, may be mentioned maize, wheat, palms, figs, peaches, pomegranates, lemons, with innumerable others, together with the vine, many of which are found even in a wild state. Real wine is made of a good quality, and *pulque* from the *maguey*, while in Buenos Ayres, liquors of every sort may be obtained. The Indians cultivate maize from which they make their favourite drink, and from a root resembling a chestnut in taste, they make an intoxicating liquor of an agreeable flavour. Schemdel calls this root *mandioch pobiore*, and the liquor drawn from it *mandebocre*. Mead is a favourite beverage, honey being abundant, and the only process observed in its formation is the mere boiling of the honey. From a vegetable termed *Arrachaca*, cultivated in Paraguay, but more particularly about Santa Fe, is obtained an inebriating liquor. The *arrachaca* when reduced to a pulp, and combined with other materials, furnishes a drink of a most agreeable and refreshing description. This plant is said to be one of the most valuable in South America, as its properties are such as to compete with, if not excel, those of the potato. It is used in the same manner, is grateful to the taste, and the most delicate appetite may use it without the dread of unpleasant consequences, being nutritive and easy of digestion. Superior starch is made of it, and it forms the basis of a variety of confectionary. Spain always shewing herself unfriendly to agricultural extension, issued at Mexico, in 1803, an order to root up all the vines in the Northern provinces, merely because the merchants at Cadiz complained of a diminution in the sale of their wines. Fortunately this order was never executed, under the impression that it might drive the natives into hostility with the government, as the culture of the vine formed no inconsiderable portion of their agricultural pursuits.

* Colclough's Travels in South America, 2 vols. 8vo. vol. i. p. 165.

The greatest enemies to the vine in this country are the ants, which give the planters the greatest trouble to subdue them. Owing to the same jealous principle of the Spaniards, just alluded to, at Buenos Ayres, grapes could not be cultivated but by special appointment, and that only for the supply of the table. Grape-brandy was, until lately, chiefly furnished from Europe, but at present it is principally distilled in the country. The lower orders in Buenos Ayres are much prone to irregularities, many of whom, when inflamed by spirits, are hurried into the committal of very brutal acts. To repress extravagancies of this nature, the government have put heavy licenses on the *pulperias* or spirit-shops, from which a considerable revenue is obtained, while 25 per cent. duty is levied on all vines and liquors imported. Travellers say that the effects of drinking are more perceptible here than in England. In many it produces derangement, and others it incites to the committal of suicide. In some of the South American districts, the natives, in their drunken moments, carry gambling to such a height, that even their wives are staked on the result of a game, and the forfeit given up in case of loss. To the ease with which drink is procured, the heat of the climate, and the consequent lassitude, may be attributed those fatal consequences. To the native tribes bordering on Paraguay and Brazil, the mandioc affords a drink both cooling and renovating. The roots of this plant are sliced and boiled till they become soft, they are then allowed to cool, the young women chew them, and they are afterwards put into the same vessel which is filled with water and again boiled, during which they are kept stirring all the time. The unstrained juice is put into large jars which are buried in the floor of the house for about half their depth. They are then closely stopped and allowed to ferment for two or three days. A notion is prevalent that if the liquor be made by men it is good for nothing; hence the labour falls to the lot of the females. On a day set apart for drinking this beverage, the women kindle fires round the jars, out of which they serve the men in half gourds with the hot liquor, which they receive singing and dancing, and always empty at one draught. Here it may be remarked, that no man when single is suffered to partake of the drinking feast. During this drinking bout, they smoke an herb called *petun* either in pipes of clay, the shells of fruit, or in leaves rolled together in the form of a tube, forcing the smoke through their nostrils, mouths, and artificial holes in their cheeks. All this time the young married men dance with rattles on their legs, but never eat anything during the interval, nor leave the house until every drop is exhausted. In this manner they remove from house to house, till all in the place or village is finished. These

meetings are commonly held once a month, and have been known to continue upwards of three days and nights. There are two kinds of this liquor called *Caou-in* or *kaawy*, red and white, and in taste resemble milk. There is a great similarity in name between the *kaawy* and the *cava* of Otaheite, and, as they are both made by mastication, seem to be nearly the same liquor, and produce nearly similar effects.* Wherever the mandioc is cultivated, it is chiefly from it that drink is manufactured. Many of the Brazilian tribes prepare a better liquor from the *acajee*, the fruit of the *acayaba*. The acajee is a kind of wild apple, and is in great request among the people of this country. It is held in such estimation, that the ages of persons are numbered by it, because it bears fruit but once a year, which ripens about the close of December or early in January. If the rains be moderate in Brazil at the time of the equinoxes, they are hailed by the people as a promise of plenty of the *acajee*, and hence they are sometimes called the rains of the *acajee*. The juice of this fruit furnishes an excellent cider. This liquor is obtained by squeezing the fruit or bruising it in a wooden mortar. At first it is white but in a few days it gets paler, having an astringent effect, and, after fermentation, becomes highly intoxicating. In about the course of half a year it gets like vinegar, but, with care in the process of making, it might keep much longer. Of the pulp, a sort of flour is made which the natives value as the highest dainty. From the fermented juice of the *Cashew-nut, (anacardium occidentale,)* a native of Brazil, is obtained a spirit which some account not inferior to the best arrack, rum, or brandy. Nine different kinds of liquors are said to be made by the Brazilians, each possessing peculiar qualities, and it is related of these savages they are as choice in the selection of the water as the Europeans are in the choice of wine. The reason assigned for making the women plant the maize, prepare their drinks, and attend to the labours of the field, is, "because," say they, "women know to bring forth, which is a thing that we do not know:—when they sow and plant, the stalk of maize produces two or three heads; the root of mandioc two or three baskets full, and every thing multiplies in like manner from their hands. Why? because women know to bring forth and to make the seeds and roots bring forth also." A drinking bout is customary at sowing time and at harvest. When a guest arrives, this is his welcome; when they rejoice, they get drunk; and when sorrowful, they get drunk likewise: thus making pretexts for indulging in intoxication at all times. The liquors are kept not only

* Southey's History of Brazil, vol. i. p. 65.

in large jars, as already stated, but in vessels hollowed in solid wood, and in large baskets so close in their texture, that with a little gum and calking they are perfectly water-tight.

In Brazil, the policy of the government had prevented the application of its native produce in the composition of liquors for the sake of encouraging the consumption of wines and brandy from Portugal. But since the removal of the Braganza family from the mother country and the establishment of a regular government, the manufactures of the Brazilians are better supported and more extended. Sugar plantations are numerous, and the exportation of that article has considerably increased, although the apparatus of the sugar-house is very simple, without any of the large machines used by the West India planters. Rum is distilled, of which great quantities are sent to various parts of the New World as well as to Europe. To almost every sugar plantation a still is attached, but, in too many instances, of very rude materials and awkward construction. The still is a mere earthen jar with a long narrow neck, on the top of which is placed a head or cap having on one side a pipe about six inches long, into which is fixed a brass tube four feet in length. This tube is put through an earthen vessel sufficiently large to hold a quantity of water for the condensation of the spirit, forming a substitute for the worm and worm-tub. The liquor, in many instances, undergoes only one distillation; but when a superior article is required, it is distilled a second time. The wash is fermented in large earthen jars, but no rules have been established for regulating the quantities of the materials employed for its preparation. A strong lee is said to be poured on the sugar juice in order to thicken and purify it. This lee is procured by infusing in water the ashes of a kind of *polygonum*, which, by the Indians, is called *Cataya*, by the Portuguese *herva debichu*. This plant has a bitter pungent taste like pepper, and is considered of use in the making of rum. Many of the planters dispose of the molasses to small distillers, who are generally of the lower class, and, with two or more of these rude stills, obtain a livelihood without much trouble; for fuel being abundant, and the apparatus simple, the men often leave the management of the still-house to women, while they are at other pursuits. Lately, however, copper-stills have been procured from Europe, the introduction of which among the more wealthy planters has produced a great reformation in this branch of business, and enabled them to manufacture the whole molasses on their own plantations.

The sugar works in Brazil have become, in many parts, respectable. These are usually erected near rivers, and some of them employ

one hundred and fifty slaves. Besides the rum, from 4 to 5,000 arobas of sugar are made in one year. So far back as 1801, there were calculated to be then in Paraiba and Mariachè 180 sugar works, which have been greatly improved by the introduction of the steam-engine.

Among the slaves and aborigines, besides rum, various other intoxicating liquors are used. A mixture of bleak sugar and water called *grapa* is made by the negroes, which, although never fermented, is drunk, on account of its cheapness with avidity, both by men and women, who continue at it whole days, dancing and singing. To give it a more intoxicating effect, the leaves of the *acajee* tree, which are of a hot quality, are added. Cider is made by the Portuguese, as well as another drink called *kooi*, of the apple *acajee*, and a sherbetta of sugar, water, lemons, and nutmeg. The *kooi* is prepared by bruising the *acajee* apples to obtain the juice, which is strained and allowed to remain until cleared by fermentation.

From the root *aipimakakara*, a kind of manioc, a wine is prepared called *aipy*. The roots are first sliced and chewed by the females, then put into a pot of water and boiled until fit for expression. The liquor thus obtained is called *kaviaraku*, and drunk lukewarm. Sometimes the sliced roots are well mixed with warm water, and the decoction is swallowed with avidity. In appearance, it is like buttermilk, and not having undergone any degree of fermentation, it cannot possibly keep many days. A better kind is made from barley or maize, and likewise another liquor called *vintro de batatas* from the batata root.

Drunkenness is not a prevailing vice amongst the Brazilians, but the slaves are fond of indulging themselves in the pleasures of intoxication when they can do so with convenience. Many excuses are formed to effect this purpose, and some of them are ingenious enough to defend this weakness. It is related of an old negro, who, as well as others of his class, was supported at the expense of a neighbouring monastery, that he would travel to a great distance to obtain liquor, and, when reproved for his irregularity, he justified himself by saying that he and his companions were not slaves to the monks but to their patron saint; and that the monks were only the distributers of the saint's property in this world. The manner in which this honest negro justified his attachment to spirituous liquors is, it is to be lamented, much the same as that which is practised in more civilized countries. It strongly reminds us of the reply of the Russian peasant to his master on being reproved for intoxication:—when asked how he could reconcile such irregularity to his conscience, he replied that

he could only have to make application to his saint to arrange all that was requisite on that score.

As Brazil is now under a monarchy friendly disposed towards Great Britain, and as vast advantages appear to offer to men of capital and enterprise in the cultivation of the sugar-cane, it seems to hold out inducements of no ordinary description to the adventurous. The country is healthy, fruitful, and agreeable, and better adapted to European constitutions than any part of the West Indies. From these considerations it might be a good speculation to make an experiment in that part of the American continent. Agriculture is almost unknown there, much less the improvements and machinery which have advanced the arts and facilitated the labours of the industrious artisans of this country. In Brazil, there is a species of myrtle called *pitanga, (myrtus pitanga)* which bears a fruit about the size of a small plum, and is of a bright red colour, ribbed on the surface. It is of a pungent, harsh nature, in consequence of which it is used as a conserve, and from it a very agreeable spirit is distilled. Port is not so much in use at Rio Janeiro as the Catalonian wine, or Cachaca, which is a species of rum. When Dr. Walsh visited this country in 1829, he found native *Caxas*, clear and transparent like water, much resembling Scotch whiskey. In consequence of its cheapness, it has many votaries, among whom sailors are not the least in number, as it is found a salutary antidote against the effects of cold or damp. The natives have a peculiar custom of bathing in a tub of punch made of *Caxas* immediately before going to bed by way of refreshment, and as a preventive against cold. Servants have been known to take a draught of it mixed with salt as if water, although it was nearly as strong and pungent as aquafortis. The blacks are fond of taking it in this way; but it has less intoxicating effects on them than on white people, which is no doubt attributable to habit. Some of the negroes in the vicinity of Rio Janeiro meet annually and drink for the space of sixteen days, during eight of which a sort of flagellation is inflicted daily on each of the parties. This is effected by means of a thong with a small stone at the end. The tribes of the Guaycuans never permit females to drink intoxicating liquors. A species of snuff from the roasted fruit of the *parica* tree is prepared by the women, and in the use of this powder a tube is applied alternately by one individual to the nostril of another, which, with the drink, effects intoxication to such an extent that some lose their senses and many their lives.

In the various towns of this territory are houses for the sale of wines, and such other liquors as the country affords. In Rio Janeiro

alone, there were, according to Luccock, in 1821, one hundred vintners, commonly called *vinder-keepers*, besides a vast number of other retailers.*

Brazil abounds with a species of wild *ananas*, but the edible sort of this fruit is cultivated in the plantations on account of its being large, juicy, aromatic, and possessing great nutritive properties. Brandy, (sometimes called Nandi,) of good quality, is made from it, as also from the fruit of the *anacardium* and the *cajueiro*, which is found in all the brandy districts. Some of the savage tribes, according to M. de la Condamine, have an intoxicating liquor called *kakouin*, for which they evince a warm attachment. From the *alfarroba* or *algarroba* tree the people of Santiago del Estero collect pods which they pound and press into a mass, and mould into cakes or square boxes. This is called *patay*, and is much used for feeding horses. When infused in water, it soon ferments and produces a wholesome intoxicating beverage. The Jesuits, aware of its fascinating qualities and the facility with which it could be converted to sensual purposes, very prudently obstructed the cultivation of the *alfarroba* in the settlements over which they had control.† The cakes made from the pods of the *algarroba* are sometimes called *arepas*, and, though very coarse, are not unpalatable.‡ From the fruit of the *Buriti*, one of the loftiest and most beautiful of the palm tribe, is prepared a liquor which is said to be nutritious and palatable, but has the singular property of tinging the whites of the eyes without injuring the constitution. The fruit, which is covered with red scales, is about the size and shape of a hen's egg, and under these scales there is an oily pulp of the same vermillion colour. From the fruit or nut of the pot tree *(lecythis ollaria)* beautiful drinking cups are made. This tree, which rises to the height of 100 feet, bears at the top a majestic crown of rose-coloured leaves vaulted in the form of an umbrella. The nut is about the size of the cocoa, and is borne on a stem, which, as the fruit gets ripe, bends with the pressure, till at length a sort of lid at the top of the shell is obliged to give way and the kernel falls to the ground. In high winds, it is dangerous to walk within the range of these trees, on account of the fall of the nuts from so great an elevation.

The *mandioc* plant in Brazil is of infinite importance, and is used as food not only in that country, but through all South America. The flour made from the root is called *farinha de pao*, or stick-flour. Cattle are fed on the roots and stems, after being cut small and exposed for

* Luccock's Notes on Rio Janeiro.

† Southey's History of Brazil, vol. iii. p. 439.

‡ Stevenson's Narrative, vol. ii. p. 186.

some time in the sun to take away their noxious qualities; though some oxen from habit have been known to eat the roots quite fresh without the least injury. Koster relates* that he had one of these animals which was so attached to the mandioc that he would escape at night from his stall and tare up the plants with such dexterity that it was only from the marks of the feet that the thief could be discovered. Yet it is singular, that although it has this attractive quality, its juice, while pressing from the root in making the *farinha*, has produced fatal effects. An instance of this given by the same traveller, in the case of a sheep, which, in attempting to get some of the roots, had taken a very small quantity of the liquid, the deleterious qualities of which operated in a few seconds. The animal tottered, fell, rose, and fell again; and, although oil was administered, its body swelled to an enormous size, and it died in about ten minutes afterwards. The *farinha* of the mandioc is prepared much in the same way as that of the Cassada in the West Indies and Mauritius. The roots are scraped and then ground into a receiver, forming a pulp, which is afterwards enclosed in long bags made of bark or reeds, and then hung up to permit the juice to ooze from the material. The pulp, when thus drained, is put on a pan either of copper or burned clay, to be dried, during which operation it is kept constantly stirred to prevent burning and to detach the mass into mealy particles.

The majority of the people use the mandioca, not merely as a substitute for flour, but even in preference. It yields two crops in the year, and is prepared by boiling and expressing the juice, which is poisonous; the sediment which remains after pouring off the water, is the *tapioca* of the shops.

Patagonia is a region cold and inhospitable, consisting for the most part of open deserts and savannas, yielding nothing but a few willows on the rivers, without a single tree or shrub adapted for any mechanical purposes. Cayenne or French Guiana, celebrated for its pepper, *(capsicum armuum)* affords little interest, though sugar, maize, cassia, Indian corn, and several kinds of fruits are there to be found. Amazonia being little known and still uncivilized, nothing can be said of it, except that it produces corn, grain, all kinds of tropical fruits, and great quantities of wild honey, but to what purpose or advantage these are converted remains yet to be ascertained.

Surinam, though fertile in general, is intersected by deep marshes, or swamps, and extensive heaths, and the uncultivated parts are covered with forests, rocks, and mountains. Sugar and other vegetable productions are to be found, among which the *quassia tree*, or bitter

* Koster's Travels in Brazil, vol. ii. p. 175.

drug, well known by the porter brewers, grows wild in the woods, and was first exposed for sale by a native called Quas, from whom it derives its appellation. The sugar plantations are numerous along the banks of the Surinam and Marivine. The city of Parimaribo, the capital, is beautifully diversified with orange and lemon trees, and fruits hanging in all directions in the utmost profusion. The whole resembles an immense garden, affording to the passenger a most grateful perfume and a refreshing shade. Rum and sugar are manufactured in this settlement which give an impulse and interest to the speculation of the inhabitants. On the coast of Surinam, the Indians have various sorts of inebriating liquors, among these the juice of the *conmoo* fruit is the most esteemed. The *conmoo* tree is one of the smallest of the palm species; the berries grow in bunches of a purple colour, resembling grapes, and from a solution of them in boiling water, mixed with cinnamon and sugar, an agreeable drink is obtained, having the flavour of chocolate. From Cassava bread, the females make a drink, termed *piworree*, similar to that bearing the same name in Demerara and Barbadoes. This bread is chewed and fermented, and the taste of the liquor which it produces has a strong resemblance to ale. *Piworree*, or Pywarree, is also made by the females chewing the cassava flower and spitting it into a wooden trough. This matter, by the addition of water, soon runs into fermentation and yields the desired beverage. When a sufficient quantity is produced, a feast ensues, and the parties drink so freely that they roll on the ground in a complete state of intoxication, while the revelry is frequently kept up for several days. *Piworree*, however, is a harmless species of exhilarating drink, as it leaves no bad effects; for, after a sound sleep, the votary is perfectly restored to his wonted health and vigour.

From maize or Indian corn, a drink is manufactured by maceration, and which is called *chiacoar*. The grain is first baked into bread, and after being crumbled and macerated with water, it is duly fermented and produces the liquor just mentioned. They make another drink from yams, cassava, sour oranges and sugar, or treacle mixed, macerated and fermented with water. This drink is much used by the Indians, but rum is the favorite beverage. Palm wine is in abundance, and generally procured from the fallen trunk of the tree by making incisions about a foot square in which the juice is collected, and after a short exposure to the sun, it ferments and yields an intoxicating wine.*

Here the vine *(vitis campestris)* grows in abundance without cultivation. The grapes are large and of various colours, having a rich,

* Stedman's Surinam, vol. i. p. 392; vol. ii. p. 115.

sweet juice. The Indians gather them and prepare them for keeping by first sweating them on hurdles over a gentle fire, then drying them in the sun, and afterwards storing them for provisions. These vines are more of a creeping than of a climbing nature, extending their branches horizontally to a considerable distance, and the pending fruit almost touching the ground.

When Ferdinand de Soto invaded the Floridas in the middle of the sixteenth century, the inhabitants were familiar with the use of the *maguey*, and had even converted it into conserves. Ponce de Leon, an adventurer of a romantic and chivalrous spirit, was the first of the many enthusiasts led to this region under the imaginary delusion that in Florida there existed a fountain which had the power of restoring youth and giving immortality to those who should drink of it;—a notion quite in accordance with the superstition of the times and the visionary pursuits of the alchymists of the age. No such fountain, however, was discovered, many of those who attempted to find it, never returned; hence it was inferred by the votaries of the day, that those persons had drunk of the immortalizing liquor, and had discovered a spot too delightful to be abandoned through any worldly or human consideration. That they had inebriating drinks is certain; but it was beyond the range of intellect of the poor Indian to ever think of a liquor that could render him immortal. Their inventions never went further than the making of liquors from indigenous fruit and grain. An acquaintance with the Spaniards, however, soon familiarized them with European luxuries, and imparted a taste for all exhilarating drinks. In the course of time, this inclination became so insuperable that the Spanish government, always having a view to its own aggrandisement, encouraged distillation, and in the Floridas as well as in the neighbouring districts, drew from it a considerable revenue. But the manufacture at best was inconsiderable when compared with the overflowing fertility of the country—a country deriving its name from the very appearance of the efflorescence of its groves, hills, and valleys. And where nature is thus bountiful, to what advantages, under a liberal government, might not her gifts be turned. Nothing remarkable is recounted as peculiar to the natives different from those of the surrounding nations; their feasts, entertainments, and ceremonies being characterized by the same uniformity that marks other American tribes, in a similar state of uncultivated nature. Bartram, in his Travels,* describes an assembly of natives which he witnessed at Attasse, exhibiting a striking picture

* Travels through North and South Carolina, Georgia, Florida, &c. 8vo. pp. 449, 50, 51. Also Adair's History of the American Indians.

of the aboriginal Floridans. During the ceremony, two slaves entered the place of entertainment, carrying a couple of very large conch-shells full of a sort of black beer. After various evolutions and movements, each presented his shell, one to the king, and the other to the next in rank, uttering two notes extended as long as he could without breathing, during which time from the king to the meanest individual at the ceremony, each continued drinking. These two notes are of such long and solemn duration that a spectator is struck with the awe which they inspire, sounding somewhat like *a-hoo-ojah* and *a-lu-jah*, and resembling the hallelujah of a Christian assembly. This ceremonious mode of drinking is continued as long as any of the liquor remains. At the close of the autumn, the savages hold a solemn fast in honour of the first fruits, or new crops having arrived at maturity. To render this the more dignified, they renew their clothing, household furniture, and cast away not only the old materials of this description, but even the remaining grain, as well as the old provisions. These are usually gathered into a heap and burned. To render the ceremony still more imposing, they fast for three days, take medicine, and put out all the fires in their villages, abstaining from the gratification of every appetite and passion. At this period, a general amnesty is proclaimed, and even the captive is suffered to return unmolested and rejoicing to his home. On the morning of the fourth day, the sun illumines a scene of a very different description. Intoxicating beverages flowing in torrents, are accompanied for three days by all the concomitant excesses which undue indulgence in every gratification produces.

From a close observance of the manners and customs of the inhabitants of the New World, and contrasting them with those of the Old, a striking similarity in some instances appears. An attempt to account for this would be foreign to the design of this work; but it may not be irrelevant to observe, that many are of opinion that the American continent was peopled by adventurers from Africa, Asia, or Europe. A very plausible conjecture is, that the posterity of Japhet diverged eastward and westward throughout the whole extent of Asia, so that those who arrived at the Pacific Ocean may have passed to America by the way of Beering's Straits. Those who came to the Atlantic shores may have crossed to this continent in the direction of Newfoundland; and others coasting along Africa may have been driven to Brazil or the West India islands by chance, through severity of weather or a deficiency in the knowledge of navigation. The description given by the Mexicans of their forefathers, is a proof of this hypothesis, since they are described as having come

from the north-west, and agreeing in their characteristics with the Asiatic wandering Tartars. This opinion is strengthened by the recent discoveries of Baron Humboldt and other scientific men; and it is almost certain that America was known to the Phœnicians. Count Roehenstart, the Russian traveller, during his residence at Mexico, writing to the Count De Legarde, says, that "guided by the learned observations of the Baron," he was enabled to procure sepulchral monuments of these people, which prove beyond a doubt the fact of this matter. It is, however, to be regretted, that when the Count was on his passage to Europe, these precious fragments of antiquity, with a rare collection of natural and artificial curiosities, were thrown overboard by a band of pirates who attacked and plundered the vessel.

Portuguese writers allege that when they discovered in Tercera, one of the Azore islands, an equestrian statue, made from a slab of stone, was found, bearing an inscription on a rock beneath. The head of the man was bare, his left hand rested on the mane of his horse, and his right hand pointed towards the west, as indicating the situation of another continent. If this be true, it evidently goes to prove that the New World must have been known to the inhabitants of the Old.

As it is well authenticated by Pliny* and others, that the Phœnicians frequently made voyages through the Red Sea, doubling the Cape of Good Hope, and coming home by the Straits of Gibralter, there is no improbability of one of these vessels having been driven westward and having arrived at last in America. One of these vessels, it is said, was driven to an island very far west, (perhaps the same as Plato's Atlantis) larger than Asia and Africa together, having a fruitful soil and navigable rivers; and that through the Phœnicians, the Carthaginians came to the knowledge of it, in which new region, says Diodorus Siculus, the Carthaginians would not permit any other nation to settle, but reserved it for themselves, that if ever they should be driven from their native soil, they might have an asyulm. Ælian says, Silenus asserted that there was an extensive continent beyond Europe, Asia, and Africa, from which it has been inferred that the inhabitants of the Old World had some faint knowledge of the New. Another circumstance, which gives additional strength to this reasoning, is, that Professor Seyffarth, of Leipsic, in 1827, found among the learned and curious repositories at Rome, a Mexican manuscript in hieroglyphics, marked with the Mexican zodiac, from which it was

* Pliny's Nat. Hist. L. ii. s. 67.

manifest that the Mexicans and Egyptians had intercourse in the most remote antiquity, and that they had one and the same system of mythology. Humboldt affirms that the ape forms one of the Mexican, Mongul, Mandshnr, Tartar, and Chinese zodiacs; and this analogy is a further confirmation of the migration of the Americans from the Old World.

It is remarkable that the people have preserved, in their traditions and paintings, a record of the creation of the world, the building of Babel, and the consequent confusion of languages. The artificial mounds and apparent sites of extensive cities, the weapons of war and other implements which have been found, some bearing Roman characters indicative of their being made in the time of the Cæsars, together with utensils composed of alloyed metals denoting the past existence of an art at present unknown to the natives of the new continent, are further proofs that the last hypothesis is more than conjectural, and that there is every reason to believe the inhabitants of America had their origin from the Eastern hemisphere. Mr. Ferrell states, that at the Bull Shoals, each a branch of White River in Missouri, several feet below the surface, relics were found which indicated that the spot had formerly been the seat of metallurgical operations, where the alloy appeared to be lead united with silver. Arrow heads cut out of flint and earthenware that had undergone the action of fire, were also found in the same place. Lieutenant-Colonel Galindo, while governor of Poten in Central America, discovered the ruins of an extensive city called Palenque, extending for more than 20 miles along the summits of the ridge which separates the country of the wild Maya Indians from the State of Chicapas, in the ancient kingdom of Gautemala. The principal buildings were erected on the most prominent heights, and in several of them there exist remains of stairs formed of stone and plaster. The stones of the edifices are about 18 inches long, 9 broad, and 2 thick, gradually inclining where they form a roof, but always placed horizontally. The eaves are supported by large stones which project about two feet. The wood-work has disappeared, and the windows are small, circular, and square perforations. Human figures in alto-relievo are frequent on small pillars, and filigree work imitating boughs and feathers, is perceptible in several places. Some of the sculptured ornaments looked like the Corinthian foliage of the ancient architects. These ruins are buried in a thick forest; and the adjacent country for leagues contains remains of the ancient labours of the people, consisting of bridges, reservoirs, monumental inscriptions, &c. Baron

Humboldt observes, that the half civilized people met with in 1537, by the conqueror Queseda, were clothed in cotton garments, and had the most intimate relation with the people of Japan. Colonel Galindo is decidedly of opinion that the Mayscas or Maya language was derived from the Japanese, and that the builders of the city of Palenque must have dated their antiquity at a period long anterior to that of Mexico, and their civilisation must have surpassed that of the Peruvians. In fact, Palenque is, in its historical importance, considered the Thebes of America.

A circus and several stone pyramids in the valley of Copon, in Honduras, are rather more celebrated than the ruins of Palenque, or those formed near Ocosingo, in the same part of this continent, and bespeak a high state of civilisation.

Other testimonials have been found, intimating that the inhabitants of the old world had early visited America. A circumstance related in the Universal Gazette of Bogota for 1832, is worthy of notice. A planter discovered a tumulary stone near the village of Dolores, about two leagues from Monte Video, covered with unknown characters. On removing this stone, he found a vault of brick-work containing antique swords, a helmet, and buckler, much worn with rust, and an earthen amphora of large dimensions. The following words in Greek characters were deciphered :—" Alexander son of Philip, was king of Macedon, about the sixty-third Olympiad—In these places Ptolemy"—On the hilt of the sword was an engraved portrait, which appeared to be that of Alexander ; and on the helmet, chased work representing Achilles dragging the dead body of Hector round the walls of Troy. From this it has been inferred that Brazil was explored by a contemporary of Aristotle, and that it is probable that Ptolemy, the celebrated commander of Alexander's fleet, driven by tempests into what the ancients called the *Great Ocean*, was cast on the shore of the new continent, and had marked the event by the erection of this monument.

During an expedition to the west of Montreal, undertaken by some French travellers, pillars of stone were found at a distance of 900 miles from that capital, of great magnificence, and manifestly of human structure, but of which the natives had no tradition ; nor did they exhibit any marks relative to their origin or purport. One stone, however, was discovered having another set in it bearing an inscription in unknown characters, which was afterwards sent to France to be deposited in the Royal Museum. The country in which these pillars were discovered had the appearance of having been

once the seat of civilisation, still retaining the vestiges of agricultural labour.*

From the preceding facts and observations, as well as the high state of civilisation found in Mexico and Peru, when first visited by the Spaniards, it is evident that the inhabitants were descended from a superior race of people; and that the knowledge of malting, brewing, and fermenting, so well known to those two nations in particular, indicates an origin from a country in which these were perfectly familiar.

In the United States, the distillation of spirits is a manufacture of considerable importance. It was practised, though rudely, by some of the early settlers, and has continued to increase in proportion to the progress of agriculture. The resources of the country are great, and, as fuel is plentiful, there is scarcely any check to the efforts of the industrious in this branch of trade. In a table of the Addenda will be found a summary of the distilleries and breweries existing in the United States, the only collected view that could be obtained. This return was made by the marshals of the districts, and by the Secretaries of the territories; but it is thought to fall considerably short of the actual number of stills and gallons of spirits, &c. The value of the whole distilled and fermented liquors of the States, in 1810, was said to amount to 16,528,207 dollars; and if its increase have kept pace with the population, the amount must now be prodigious. Mr. Seybert, in his Statistical Annals of the States, published in Philadelphia, in 1818, says that the number of the distilleries was about 15,000. To encourage these and the brewing establishments, as well as the making of wine, government has made such salutary regulations, as cannot fail to render them of great service to the agricultural interests of the country. The restriction on home-manufacture is comparatively trifling, and has been computed to amount to little more, throughout all the States, than about *one cent* or scarcely a *penny* per gallon, while on all beer, ale, and porter, imported in bottles, a duty is imposed of fifteen cents, or if imported otherwise than in bottles, of ten cents per gallon; and on spirits from grain, first proof, forty-two; second, forty-five; third, forty-eight; fourth, fifty-two; fifth, sixty; and on all above the fifth proof seventy-five cents per gallon. If the spirits should be made from any other materials than grain, the duty on the first and second proof is thirty-eight cents; on the third, forty-two; on the fourth, forty-eight; on the fifth,

* Vide Kalm and Carver's Travels through North America.

fifty-seven; and upon all above that number, seventy cents per gallon. On wines imported from Madeira, on Burgundy, Champagne, Rhenish, and Tokay, one hundred cents; and on Sherry and St. Lucar wines, sixty cents. On wines not enumerated above, when imported in bottles or cases, seventy cents. Lisbon, Oporto, and other wines of Portugal and Sicily, fifty cents. On the wines of Teneriffe, Fayal, and other western islands, forty cents; and on different kinds not imported in cases and bottles, twenty-five cents per gallon. The foreign spirits imported into America are considerable. It appears by the public returns, that in the year 1790, 3,678,199 gallons were imported; and in 1792, 4,869,992 gallons; while in the latter year, 948,115 gallons of spirits, the produce of the United States, were exported. During the years 1806 and 1807, 9,750,000 gallons a year were imported. The imports from various parts of the world were, at a medium, during the same years, for wine 3,881,000 gallons; while those of rum from the United Kingdom of Great Britain and Ireland, amounted to 41,836 proof gallons in the period of five years, from 1826 to 1830, both inclusive.*

The Americans export spirits to Manilla, the Philippine islands, and other parts of the East Indies; to the Floridas, Honduras, Campeachy, and the Mosquito shore; also to the Spanish West Indies, to their colonies, and even to China. In 1812, 101,243 gallons of whiskey, besides wine and geneva, were sent to those places. Large importations of wine are made from Madeira in return for other merchandise. The wine is purchased at about 160 dollars a pipe, and what is not consumed in the States is carried to the East and West Indies.

The immense number of navigable lakes and rivers which intersect this vast continent, affords great facility for the transportation of spirits, and the interchange of commodities between the different States. In the course of eleven months, terminating on the 1st July, 1811, among other articles, 3,768 barrels of whiskey were sent down the Shenandoah and Potomac rivers; whilst the spirits made at Brownsville, near Pittsburg, are in such repute that they are frequently sent to New Orleans, a distance of nearly 2,000 miles. In the year 1822, 7,500 barrels of whiskey, value 500,000 dollars, 3,000 barrels of cider, value 9,000 dollars, and 3,000 barrels of porter, value 15,000 dollars, were sent from the Western States for consump-

* Vide Parliamentary Papers.

tion; giving a tolerably correct view of the increase of agriculture and husbandry in this portion of America.*

In 1810, as appears by the report of the Secretary of the Treasury, the quantity of malt liquors made in the States was nearly equal to the consumption. The annual importation was reduced to 185,000 gallons, while the exportation of native beer, ale, and cider amounted annually to 187,000. According to Bristed, 25,000,000 gallons of spirits were yearly distilled and consumed in the United States, as calculated in 1817, which must have since considerably increased.

In the early stages of the manufacture, the distillers and brewers seemed to have no other object in view than to meet the consumption of the States, and of the Indian tribes connected with them. But they have long since turned their attention to foreign markets; and from the ease and cheapness with which they can now procure and manufacture the raw materials, they are likely to become successful rivals of all the nations of Europe. The government viewing this trade as of some consequence to the revenue of the country, in 1813, imposed a duty on all the stills, and the spirits distilled within the states. This duty stood as follows:—viz.

Stills employed in distilling from native materials, such as rye, Indian corn, apples, &c. including the content of the head:—

	Dol.	Cents.
For two weeks	0	09
one month	0	18
two do.	0	32
three do.	0	42
four do.	0	52
six do.	0	70
twelve do.	1	00

Stills employed on foreign materials, such as molasses, &c:—

One month	0	25
three do.	0	60
six do.	1	05
twelve do.	1	35

In 1814, these duties were increased; but at the close of the war in 1815, the additional duties were repealed. The internal imports remaining in 1817, were those on licenses for stills, boilers, refined sugar, &c., the collection of which depended on the oath of the manufacturer, a collector, but no other officer, being employed. To collect any description of revenue by means of oaths, is manifestly impolitic,

* Vide Excursion through the United States and Canada, in 1822 and 3, p. 118.

as it is well known that to evade enactments of this nature, perjury is unfortunately too seldom considered a crime; and certainly a low duty, such as that detailed, is less calculated to induce persons to swerve from the strict path of rectitude, than when the duties are high and oppressive.

The distilleries, for the most part, are conducted on a small scale; and, as might be expected when the trade is committed to a vast number of people of opposite interests, a great deal of competition as well as of ignorance prevails. Breweries not being generally established, the want of barm has not failed to produce great inconvenience; and the distillers in many of the principal towns, as well as in the most remote parts of the Union, are obliged to have recourse to various deleterious substitutes, for the fermentation of their wash. Hence, combined with a want of due attention to the attenuation of their pot-ale, arises that ardent quality which renders their whiskey in many instances disagreeable to foreigners. Great improvements, however, are said to have taken place; and their peach-brandy, which is now made in abundance, is allowed, when matured by age, to be one of the most exquisite spirits in the world;* yet, in making it, the peaches are suffered, in some instances, to remain in the vat, till they are in such a state of putrefaction as to be offensive.† Fifteen bushels are allowed to yield about six gallons of strong brandy. In preparing them for the fermenting tuns, the seeds are carefully taken out, and the substance of the peach is bruised to a pulp and left for three weeks or a month in that state to ferment; a proper allowance of water is then added, and they are distilled. Peaches are abundant in most of the States; at Philadelphia, there were 2,107 baskets of them at one market, and they sold for 12 cents (6*d.*) per bushel! The price at the same time in New York, was about one dollar a bushel:—a single orchard has been known to produce 1,100 bushels.

Brandy is manufactured in America from various fruits; and from the persimon apple a valuable spirit is made by putting a quantity of the fruit into a vessel for a week until it becomes quite soft. Water is then poured in and left for fermentation, without the addition of any other ingredient to promote it. The brandy is then made in the common way, and it is said to be much improved when mixed with sweet grapes that are found wild in the woods.

* Cox's View of the United States, p. 176.

† The peach tree on the river Ohio comes to maturity in three years. Mellish. p. 343.

Another kind of palatable liquor is procured from this apple. The ripe fruit is bruised and mixed with wheat or other flour, and formed into cakes which are baked in an oven. These are afterwards placed over the fire in a pot full of water, and when they become blended with the fluid, malt is added, and the brewing completed in the usual manner: thus is produced a beer preferable to most others.

In all the States, apples are abundant, particularly in New England and New York, and therefore cider is the common drink of the inhabitants. In a fruitful year, apples are so plentiful as to be given to whoever will take the trouble to gather them. Vast quantities are also consumed by cattle and swine. The cider, when well made, is of excellent quality, and the least juicy apples afford the best liquor. A barrel of cider sells from about one and a half to three dollars. A field containing a thousand trees is not uncommon, and a single tree has been known to produce six barrels of cider in one season,—a circumstance the more extraordinary when it takes three barrels of apples to make one of cider. Mr. Stuart, a late writer, says that much cider is made from the crab-apple, which is worth about six-pence per bushel; but that a considerable quantity of engrafted fruit is usually mixed with it. This liquor, he adds, is for the most part generally inferior to English cider. The Shakers, a religious sect, have two establishments in the State of New York, at which they manufacture cider of an excellent quality, which sells so high as ten dollars per barrel.*

From the maple, which abounds in Massachusetts, Vermont, Pennsylvania, Rhode Island, Ohio, Tenessee, North Carolina, and other states, an extensive supply of sugar is drawn. Of this tree, there are three varieties,—hard, black, or rock maple; white, silver, or middle maple; and soft, swamp, or red maple. Chemists have proved that the saccharine matter is abundantly diffused through the vegetable kingdom. Plants from which it is produced are most numerous in the East and West Indies, and of these the maple is next in eminence to the sugar-cane. Of the various kinds of this tree, the sugar-maple *(acer saccharinum)*, and the silver maple *(acer dasycarpum)*, are the most productive. To the Americans it has proved a source of wealth and domestic luxury. Even in Germany, it is asserted that those trees will afford sugar equal in quality to any Muscovado of our islands, and so cheap as 4*d.* or 5*d.* per pound.†

The sugar-maple trees grow to the height of from 80 to 120 feet, and from 2 to 5 feet in diameter. They put forth a beautiful white

* Stuart's Three Years in the United States, 2 vols. 8vo., vol. i. p. 267.

† Philosophical Magazine, vol. iii. p. 105.

blossom in spring before they show a single leaf, and arrive at full growth in about 20 years. The wood is very strong and of a fine texture; being very inflammable, it is not employed in building, but is used chiefly for fuel. The mode of tapping the tree is by perforation with an axe or auger, the latter is the preferable instrument. The incision being about three-fourths of an inch in an ascending direction, is afterwards gradually deepened to two inches. A spout made of sumach or elder is introduced about half an inch into the hole, and projects from 3 to 12 inches from the tree and $2\frac{1}{2}$ feet from the ground. The sap flows from four to six weeks, and in greater abundance where there is frost in the night and a thaw during the day, and in fact, does not flow at all without frost. There are three modes of converting the sap into sugar, viz., evaporation, freezing, and boling, the last of which is the most general and rapid. Farmers have no better apparatus for conducting the process, than one or two small iron kettles, and with these they will make 200 or 300lbs. of sugar in the space of a fortnight or three weeks. Others, however, carry on the manufacture more scientifically, on an extensive scale. For the collection of sugar from the maple tree at the time when the frosts are breaking up in the Ohio and other States, whole families from neighbouring villages and towns resort to those woods where the trees abound. Here they pitch their tents, and the rendezvous is called a *sugar-camp*. There is no means employed but that of reducing down the sap by boiling from its limpid state to a pulpy or inspissated consistence, and, while cooling, it is stirred a little with a stick in order to granulate more readily until converted into sugar. There are several modes by which it is graned by the French settlers, who make it into a hard substance. Those practised in the West Indies are probably the best. The grane of this sugar is sometimes as large and as fine as that of the best Muscovado. The sap of this tree is a very pleasant drink, and the sirup is by many preferred to honey. A single maple will produce in the season from 8 to 14lbs. of sugar, and one family has been known to collect from 9 to 20 cwt. in a good year. One hundred trees tapped in April with the attention of one man for fifteen days, have been known to yield 112lbs. of sugar, 10 gallons of molasses, and 1 barrel of vinegar. The trees, when properly heated, do not suffer by this exudation, and when the sap has ceased to flow from the incisions, plugs of wood are introduced into the auger-holes, which in the course of two or three years are covered with them. The maple is a hardy tree, and found to grow well in the cold climate of Canada. It has been suggested that it might thrive in Great Britain

and Ireland, and be productive of employment and profit to those who would encourage its cultivation—a speculation that might not be unworthy of a trial. The aborigines collect twice a year, (during the spring and fall of the leaf,) large quantities of this sugar, which is of a greenish hue, and in taste a little acid. The first collection takes place in February, March, or April, according to the latitude and climate; the second occurs when the juice has not a sufficient body to become sugar, and when it is converted into a sort of molasses, which, mixed with water, affords a cooling draught during the heat of summer: some boil it with hops and make it into beer. The time of collecting the sugar is a period of great feasting amongst the poor Indians, who, at intervals, are seen in groups of both sexes at the foot of the trees; the young dancing and playing at different games, the children bathing under the direction of the different Sachems, while the aged, awaiting at intervals the collection of the sap, enjoy the festivities of the scene, and occasionally partake of the innocent delights of the season. The profits of the maple tree do not arise from its sugar alone, for it affords most agreeable molasses and excellent vinegar. The sap, which is suitable for these purposes, is obtained after that which affords sugar has ceased to flow.

These sugars and molasses form the basis of a large proportion of the rums at present manufactured by the Americans, to the great injury of the British colonies, as is manifest from the great decrease in the exports of these articles from thence to the States. The extent and value of the maple sugar manufactory will be best illustrated by the subjoined view of the returns of a few of the Sates for the year 1810:—

Massachusetts	422,000lbs	value,	82,400 dollars.
Vermont	1,200,000	.....	120,000
Delaware	755,859	.....	150,000
Virginia	1,659,447	.....	... ...
Ohio	3,023,806	.....	309,932
Indiana	50,000	.....	... ...
Kentucky	2,471,647	.....	308,932
Tennessee	162,340	.....	... ...
Illinois	15,600	.....	... ...
New York	64,000	.....	10,000

The price varies from 7 to 16 cents per lb. but it is in general cheap, compared with that which is imported. It has been computed that at least 71,000,000lbs. of sugar are required in the United States for the annual consumption. Of this quantity, it will be seen that the maple forms no inconsiderable portion. That made from the cane is

rapidly increasing, particularly in Louisiana and Georgia. Cane plantations are extending as far as 150 miles north of New Orleans, along the banks of the Mississippi. Though the cane does not succeed every year, yet the profit of one good season is a sufficient remuneration for several indifferent crops. The canes are generally cut in November and December, and the sugar is immediately pressed out by rollers.

The maple sugar has arrived to that importance that it forms an article of export: in one year this export amounted to 4,374 dollars. This article is in such demand at home, and so cheap, that it always meets a ready sale.

The sap of the hickory becomes a fine white sugar merely by drying, and is, in its native state, a very pure and sweet sirup. The juice of the beech and birch, when fermented, affords a good liquor resembling beer. Indian corn, which is nearly the staple grain of all the States, affords a never varying supply of material for distillation. This grain rising to the height of from 7 to 12 feet, is well calculated for a climate where there is little rain in the summer, as from the peculiar construction of its leaves it has the power of retaining in the interstices a quantity of dew or rain for its nurture. Although Indian corn *(zea mays)* is more productive than any other kind of grain, yet it often suffers in common with other vegetable productions from the various changes of the seasons; but in particular from the ravages of squirrels. When the common food of the squirrel, such as nuts, masts, &c. fails in their native forests, those animals, congregated in legions, leave their wonted haunts, and spreading in every direction, devastate whole plantations of Indian corn. So numerous, destructive, and greedy, are those mischievous little creatures, that sometimes three or four of them have been seen on the same stalk contending for the ears. The farmers unite for their destruction; and it is said that in one week upwards of 20,000 have fallen victims to their vengeance.

The vine is found in America both indigenous and exotic. Its abundance in the wild state induced one of its earliest discoverers, according to Icelandic records, to give it the name of *Vinland*, in the year 1001, after which dried grapes or raisins became an article of export from that country to Norway. The fruit of the vine, in the northern parts of America, is of a diminutive size. In Canada, the grapes are very small, and although Ellis, in his voyage, tells us that grapes grew spontaneously about Hudson's Bay, yet I cannot agree with him, that the fruit was equal to the currants of the Levant, owing to the coldness of the climate, and the stunted growth of the plant. The French settlers in the Illinois territory, have turned the

wild grape to some account; and finding it growing there in luxuriantly wild abundance, have made from it considerable quantities of excellent wine, which they dispose of to the neighbouring settlers. Hunter, in his Memoirs, says, when speaking of the Missouri and Arkanzas country, that the grape vines producing black, red, flesh and white-coloured fruit, are to be met with in astonishing quantities in the hollows of prairies, the natural results when this plant is exposed to a free circulation of air and the direct rays of the sun, both of which it enjoys in the open prairies. He saw hundreds, nay thousands of acres, covered with the vines, and loaded with the most delicious grapes. And were it not for the wild animals, which make paths in order to feed on the fruit, it would be impossible to pass through the thickly intertwined branches. In parts of the country bordering on the Osage river, the crab-apple, plum, and wild cherry-tree abound, which serve as supporters to the vine, whose branches are so thickly interwoven as to exclude the sun's rays from the ground beneath.

The vine of late years has been much cultivated among the Americans. In 1805, a company of emigrants, from the Pays de Vaud, settled at New Switzerland, in Indiana, with a view of cultivating the vine; and formed an establishment there, extending about seven miles along the Ohio. The vineyards are now very extensive, and the settlement is in a prosperous state. In 1810, the crop of that district exceeded 2,400 gallons; and in 1811, upwards of 2,700 gallons. The wine was allowed by correct judges to be nowise inferior to the claret of Bourdeaux. Vines have been also successfully cultivated in some parts of Pennsylvania, and excellent wine made of them.* Many sorts of foreign grapes grow luxuriantly in New England, and yield excellent fruit. The most delicate require to be covered during the winter:—the purple Madeira grapes bear the winter very well. The grapes that have succeeded best are those from the Cape of Good Hope and the Island of Madeira. Those of the country yield wine of tolerably good quality, and from them, in 1810, there were produced 96 barrels, valued at 6,000 dollars. These successes joined to other considerations, have given rise to the belief that America, in a few years, will be completely independent of France, as well as of the other European States, in the article of wine.

The severity of the winters in America, is, in Mr. Cooper's opinion, no objection to the successful cultivation of the vine; for, in

* Neilson's Recollections of six years' Residence in the United States, 8vo. 1830, p. 174.

a country which extends from the 27th to the 47th degree of latitude, it is scarcely possible to suppose that the vine cannot flourish. The grape that affords good wine is rarely fit to be eaten; hence Mr. Cooper says, that had the Americans patience to try the experiment, the common little fox-grape would in time afford a fine wine. This grape greatly resembles that of the best vineyards of Switzerland, and the fact of its not being a good eating grape is altogether in its favour. This writer is of opinion, that to a fat soil, should be prefered a gravelly hill side, well broken up with a good exposure to the sun, for the site and produce of a good vineyard, which might be easily found in any of the middle states of the Union.* The fox-grape, *(vitis vulpinum)* is remarkable for the large size of its vine, which, in many places, climbs to the tops of the highest trees, and takes such full possession of them, that, after the fall of the leaf, the tree to which it is attached seems to be loaded with its fruit. The vine at the bottom, is commonly six or eight inches in diameter; and instances have been found of its measuring thirty-seven inches in circumference near the ground. The fruit is very good after the frosts have commenced.

In some of the plantations, brandy is made from the lees of the wine; but the apparatus is often ill adapted to the purpose. It may be observed in general, that in the manufacture of spirits, the Americans seldom practise that cleanliness and caution in brewing, fermenting, and distilling, which, in other countries, are so essential to flavour and quality. They ferment the wash, in many instances, on the grain, and put the mixed mass into the still—a practice calculated to give the spirits a strong empyreumatical flavour, as no machinery is used.

The error of mixing extraneous ingredients with the proper materials is very prevalent; among those is salt, which in Indiana is used in great quantities. This custom prevailed a long time in Great Britain and Ireland; and in the highlands of Scotland, it is in some places observed to this day. The affinity which salt possesses for the watery particles of the material in the still, may, perhaps, render it useful, but it is at present rejected by the great body of the distillers of Europe.

The rums of New England are considered of good quality, and some deem them not inferior to the best that are produced in the West Indies. In 1810, they distilled in this State 2,472,000 gallons of rum; from grain, 63,730 gallons; from cider, 316,480 gallons, while the

* Cooper's Residence in France.

breweries yielded 716,800 gallons. Besides this extensive manufacture, much is imported. Geneva is successfully imitated, particularly since the tide of emigration has brought many intelligent men from Holland, who possess sufficient knowledge of this branch of trade, to render the American article equal to that manufactured in the Netherlands. Many of the Irish emigrants distil, in genuine purity, that description of spirits commonly called *Innishowen* or *potheen*, which is no less a favourite on the other side of the Atlantic, than on the shores of Magilligan, or the banks of the Shannon. The following mode of making it at an early period, is thus described by an eye-witness :— To a bushel and a half of rye, four quarts of malt, and a handful of hops, were added fifteen gallons of boiling water, which were allowed to stand for four hours. These being increased by sixteen gallons more, two quarts of home-made yeast were thrown in, and in this proportion either a large or small quantity of worts was prepared, which, after being allowed ample time to ferment, was distilled in a simple apparatus. One bushel of rye produced about eleven quarts of a weak and inferior spirit, and sold at the rate of 4s. 6d. per gallon. The refuse of these small stills was used in feeding swine.

The use of malt liquors is increasing in all parts of America. Bottled porter is an article in much demand, but it is greatly inferior to that made in Great Britain. Newburg, a town about 60 miles above New York, is famed for the brewing of good ale. Albany is also celebrated for the excellence of its ale, which is sent all over the States and greatly admired. This branch of manufacture, like many others in America, is becoming of great interest and value. Besides the advantages they possess in grain and water, hops are now cultivated in different districts. New England affords a greater quantity than any other spot of equal extent in the Union, yielding from 1,000 to 1,500lbs. an acre, and sell for 6d. per pound. The manufacture of malt liquors, although on the increase, is much below that in different parts of Europe, but the preference is given to spirits, and hence the distillery establishments are vastly more prosperous.

Honey is plentiful in different parts ; the bees are not only domesticated, but are often found lodged in the hollows of trees in the forests, and men skilled in the business discover their retreats and obtain great supplies. From the white clover which abounds, honey is procured of the most pure and perfect sort, and might be increased to any extent. In the Carolinas, there are prodigious quantities of it, from which are made excellent spirits and very fine mead. There is no plant in the States to which the bees are more attached than buck-wheat. This is not, however, generally cultivated in Kentucky,

which is one of the principal reasons why honey is not collected to any extent in that settlement. In many parts of the States, bees are partial to the rich low grounds commonly called *bottoms*, from their abounding in a variety of plants, shrubs, and flowers; among which the *Polygonum scandens* (wild buck-wheat) is peculiarly attractive.

In the enumeration of the various kinds of drink common in America, it would be unpardonable to omit noticing the Ballston Waters, in the State of New York, which possess qualities highly exhilarating, sometimes producing vertigo, that has been followed by inebriety and drowsiness. These waters are considered by the farmers of the neighbouring districts as an excellent beverage, and are sent for at a distance of from 6 to 10 miles for refreshment to the labourers during the hay-making and harvest; thus superseding, in a great measure, the use of any kind of ardent spirits.* The properties of the Saratoga water, situated seven miles from that of Ballston, are of the most remarkable nature, and the quantity of gas it contains is such, that a very nice sort of breakfast-bread is baked from it instead of yeast.

To entitle persons to retail wine and spirituous liquors, they are obliged to take out a license at the following rates, viz:

Retailers of wine and spirits, including merchandise,	25	dollars.
Wines alone,.....	20	...
Spirits alone,.....	20	...
Domestic spirits,.....	15	...
Merchandise, other than wine and spirits,.....	15	...

But in all places in which the population does not exceed one hundred families to the square mile:—

Retailers of wine and spirits, including merchandise,	15	dollars.
Wine and spirits,.....	15	...
Spirits alone,.....	12	...
Domestic spirits,.....	10	...
Merchandise, other than wine and spirits,.....	10	...

These licenses are generally obtained from the mayor or chief magistrate of a city or town. In New York, both wholesale and retail wine and spirit dealers are termed grocers, and their premises are labelled with the words "*grocery stores.*" The small retail shops, commonly called "*grog shops,*" are for the most part at corners of streets, and the proprietors are chiefly Irishmen. The principal article for consumption is *Yankee*, or New England rum. The price varies according to the quality from 2d. to 6d. the glass; and it is rarely drunk otherwise than with cold water. Any infringement on the

* Dwight's Travels in New England and New York, vol. iii. p. 399.

regulations by which licenses are governed is visited by different degrees of punishment. All spirits brought into the city of New York from the country are inspected on their arrival, as also the spirits made in the city, by officers appointed for the purpose. One is called Inspector General of domestic spirits, with five others who act under him. In Connecticut, persons selling spirits without license forfeit 10 dollars for the first offence, 20 for the second, 40 for the third, and so on in proportion.

The following is a pretty correct view of the rates at which the different kinds of liquors are sold in the United States :—

Brandy from 1¼ dollars (5s. 8d.) to 2 dollars (9s.) per gallon.
Holland Gin, 1¼ do. 2 do. do.
Jamaica rum, 1 do. (4s. 6d.) 1¼ do. (5s. 8d.) do.
New England rum and whiskey, 33 cents (1s. 3d. or 1s. 6d.) to 50 cents (2s. 3d.) do.
Madeira wine, 12 to 18 dollars.....per dozen.
Claret, 3 to 15 do. ..... do.
Table beer,.....6d. per quart.
Bottled beer,.....6½d. do.
Common ale,.....5½d. do.
Best ale,.....7d. do.
Porter,.....6½d. do.
Cider,.....11s. 3d. per bar.

From the cheapness with which spirits can be procured in the United States, averaging scarcely more than 38 cents the gallon, the people indulge themselves to excess, and run into all the extravagancies of inebriety. Notwithstanding this round charge against the Americans, it would be doing them injustice not to state that the beastly slave to habitual intoxication is not a common character among them, although it is admitted that there is a greater consumption of liquor in the States in proportion to the population, than in any other quarter of the known world. How this happens it is difficult to determine ; some attributing it to one cause and some to another. That it is a great evil all admit, and it can only be accounted for from a combination of circumstances which rarely occur in other places. The influx of emigrants, their lack of acquaintance, want of employment, habits of former living, new associations, excessive heat in summer, and cold in winter, alike conspire to work on the frailties of human nature, and to reduce individuals to this debasement of character. Indeed, when the moral habits become once depraved, it is difficult to restore the mind to the exercise of religious pursuits.

From the reports of several societies to the government on the growing evils of intoxication, it was found necessary that some active and determined measures should be taken; and in order to check this baneful vice, the American legislature, in 1821, wisely enacted a law which places the concerns and property of habitual drunkards in the hands of a committee appointed by the Court of Chancery, thus extending to them the jurisdiction exercised by the court with regard to the estates of lunatics.

So great was the consumption of spirits, that in New York, there were not less than 1600 spirit sellers; and throughout the whole of the Union, the number of dram-shops exceeded that among us in a tenfold proportion. One-tenth of the entire population of the States resides in that city, which, it is said, consumed spirits to the amount of three millions of dollars; and allowing for the remaining nine-tenths a consumption in the same ratio, the money squandered in this way would amount to six millions of dollars.

By a report of the trustees of the alms-house for the city and county of Baltimore in 1827, it appears that of 623 adults, admitted into that asylum during the year ending April, 1826, it was positively ascertained that 554 of that number had been placed there from the necessitous circumstances to which they were reduced by excessive drunkenness. No wonder that so awful and calamitous a state would await such a number of individuals, when we find that even boys acquire the habits of drinking much earlier than they do in Europe. Not only to the causes enumerated as laying the foundation of such vicious propensities, but to the practice of smoking may be attributed a great deal of this weakness. It is no uncommon thing to see a boy of 12 or 14 years old, with a cigar in his mouth, walk into a tavern in the forenoon to take a glass of brandy and bitters to quench that thirst which the free use of tobacco always occasions; and it is well known that habits, when early contracted, become in some measure constitutional. A bad practice also prevails in America of breakfasting very early, which creates a desire for food in the middle of the day, at which time a glass or two of ardent spirits is taken, and hence the excitement which this custom has established, was kept up during the day. And we find that at taverns it was common to see a tub of water, with a ladle in it, placed constantly on the counter, from which every man that comes in, helps himself, while a decanter of spirits is given to take out of it what quantity he may think proper, it being considered that water taken without such mixture was dangerous.

An American for the most part justifies his grog-drinking propensity by alleging the deleterious qualities of the water—a circumstance confirmed in an anecdote told of a European emigrant who had resided many years in the New World, and who on visiting the Southern States, was asked what kind of water they had in New York. "Really," replied he, "I cannot pretend to say, as I never tasted water there that was not mixed with some kind of liquor." By the general practice of tippling a great deal of time is squandered and the moral principles at length sink into degeneracy. Captain Basil Hall, in his Travels through the States in 1827 and 1828, says that he did not witness any extraordinary excesses, though he saw *sipping* to be a universal practice, that is, taking a little at a time and that every hour of the day,* though he adds, that in the aggregate they, perhaps, do not take more than in other countries, where the means of procuring ardent spirits are as ample, and the liquor is as abundant. If general report respecting the character of the Americans be true, there is less of social intercourse and enjoyment in their drinking than among Europeans, for, instead of indulging themselves in chat over a glass, they generally swallow at the bar of a tavern whatever they wish to take, rather than retire to a room for the sake of conviviality. These solitary drunkards usually distinguish their draughts by the low, cant terms of "*phlegm dispensers*," "*eye openers*," "*perfect love*," "*life of man*," "*mint-julep*," &c. Forty millions of dollars, it is thought, are thrown away annually on spirits in the States, and it is frightful to think that among the prosecutions for irregularity in one year at New York, 800 of these cases arose from intemperance, while of 730 persons committed the same year to the work-house in Baltimore, 554 were for intoxication; and in the entire of the States, it is conjectured that not less than 31,000 fall annual victims to this debasing propensity. No wonder, then, that the people of the States should be so anxious for the establishment of *Temperance Societies*, since the good order of the community depends upon its regular and moral constitution.

A brief sketch of the rise, progress, and effect of these societies may not be uninteresting. The first meeting for the suppression of intemperance was called at Boston, in February, 1824, and the result was the formation of a society, the leading features of which were, that its members pledged themselves to abstinence from drink, and to endeavour to change the habits of the nation with regard to the use of intoxicating liquors, as much as lay in their power. Subscriptions were entered into to the amount of £2,480, and such was the increase

* Travels in North America, 3 vols. 8vo. vol. ii. p. 99.

of those societies, that in the close of 1829, there had been formed more than 1,000 Temperance Societies, upwards of 50 distilleries stopped, above 400 merchants relinquished the sale of spirits, and upwards of 1,200 drunkards had been reformed. The crew of the United States sloop of war (Falmouth), was amongst the first of the seamen that shewed an example of abstinence, 70 of them having resolved to abstain from spirits, while between 40 and 50 of the crew of the Brandywine frigate followed the example. In 1824, the imported spirits amounted to 5,285,000 gallons, while in 1830 they amounted only to 1,195,000, shewing a difference in the consumption of 4,090,000 gallons in the course of six years, which is mainly attributable to the influence of these societies. Between the 1st January, 1830, and 1st January, 1831, one hundred and fifty vessels sailed from the port of Boston without carrying ardent spirits. On the 1st May 1831, the number of Temperance Societies had increased to 2,200, and that of the members to 170,000, giving an addition of 179,000 members, being 70,000 members, and 1,202 societies increased in the space of two years.

From their influence, and the state of public opinion, it was computed that 300,000 more had formed the resolution of not using strong liquors, nor furnishing them for the use of others. One thousand distilleries had been stopped, and the use of ardent spirits excluded from more than one hundred public-houses. The following year the Society extended its efforts by a promulgation of its principles through all parts of the States, Canada, New Brunswick, and Nova Scotia, Mexico, all Europe, Palestine, and the Sandwich Islands. In 1832, the clergy endeavoured to exclude drunkards from the communion-table, and preached strongly against the use of intoxicating liquors, which was a powerful auxiliary to this work of sobriety. In 1831, fifty thousand members were added to the Temperance Society of the State of New York, and it was computed that in that year, 1,500,000 people of the States abstained from the use of ardent spirits, and from furnishing them to others. There were then 4,000 Temperance Societies, embracing 500,000 members ; 1,500 distilleries had stopped, 4,000 merchants gave up the spirit business, and 4,500 drunkards were reformed. To aid these moral efforts, the Adjudant General issued an order prohibiting the distribution of spirits amongst the army, and substituting 8lbs. of sugar, and 4lbs. of coffee for every 100 rations as an equivalent for the spirits formerly in use. The same order prohibited the introduction of spirits, into any fort, camp, or garrison of the Union, and the selling of them to the troops. In 1833,

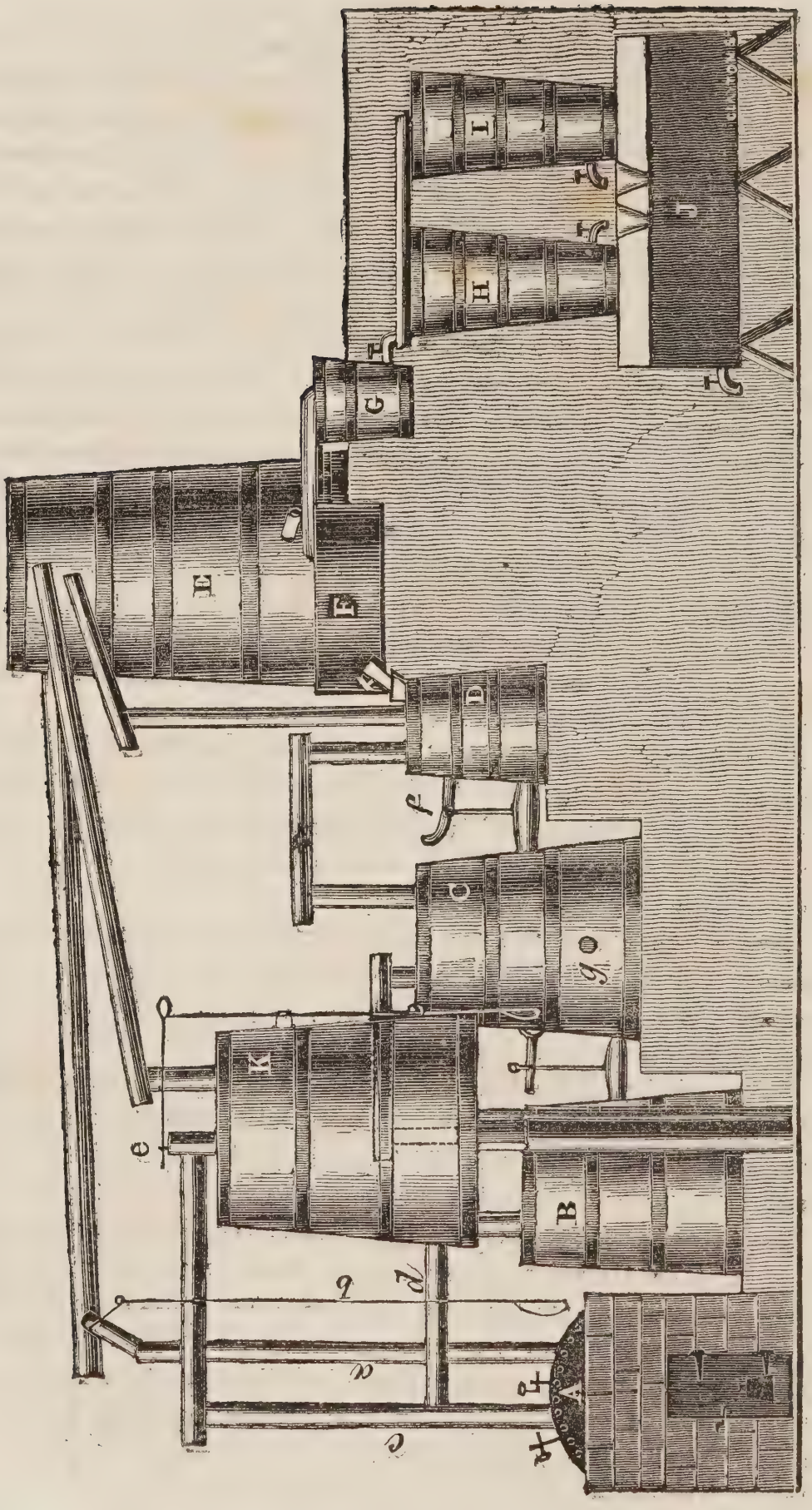
a "*Congregational Temperance meeting*," was held at Washington, at which the Secretary at War, Mr. Lewis Cass, presided, when it was declared that—"The liberty and welfare of the nation are intimately and indissolubly connected with the morals and virtues of the people; and that in the enactment of laws for the common benefit, it is equally the duty of the legislative body to guard and preserve the public morals from corruption, as to advance the pecuniary interest, or to maintain the civil rights and freedom of the community."—In that year, the American Temperance Society contained 2,000,000 of members out of a population of 15,000,000, of which 2,000,000 were slaves, consequently every third man in the country was engaged in the suppression of intemperance. In 1834, the number of Temperance Societies had increased to 7,000, while the same number of merchants had ceased to sell ardent spirits, and 1,000 vessels belonging to the States were performing their voyages without them. Even on board the steamers, through the influence of these societies, the practice of giving brandy to the passengers has been discontinued, and a regulation, somewhat similar, has been introduced into many of the public-houses, now almost wholly frequented by travellers, not to sell wine or liquor of any description except to boarders.

As a further inducement to Temperance, the Boston Insurance Company agreed to return 5 per cent. on the premium of every vessel navigated without spirituous liquors, and such general encouragement to abstinence continues to be given, that the societies are progressing with vigour and efficiency.

It must be admitted that few countries required a greater regeneration in point of sobriety, and it is much to their credit that they have as yet surpassed all other nations, who have followed their example in this work of reformation.

The proximity of Canada to the United States, has rendered the propensities of drinking familiar and habitual to many of the inhabitants, among whom the practice of manufacturing liquors is pursued nearly in the same manner, but the trade is not equally extensive.

Numbers of distilleries are now to be found both in Upper and Lower Canada. The Canadian distilleries are mostly made of wood and worked by steam. On the river Humber, seven miles from the city of Toronto, a distillery has been erected by Mr. Robson, with a description and drawing of which I have been favoured by a gentleman lately resident in that country; and the annexed engraving has been expressly executed for this work.


I
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A is the brick work, in which the iron boiler, with a cylindrical flue running through the centre, is inserted. B and C are the first and second wooden stills of the same size, being 4 feet 8 inches at bottom and 4 feet, 6 inches at top, with an altitude of 6 feet. D is the doubling or low wines' still, 2 feet 10 inches at bottom, and 2 feet 4 inches at top, the altitude being 3 feet, 9 inches. E is the worm-tub, 6 feet at bottom, 5 feet at top, and 9 feet in altitude, supplied by a copious stream of water. F the low wines' and feints' receiver. G is the recipient for the spirits previous to passing through the rectifiers or filtering vessels, and is 2 feet at bottom, 2 feet, 4 inches at top, by 2 feet in height. The top diameter of H and I is 2 and the bottom 3 feet; the altitude being 5 feet. The vessels (H and I) are filled with charcoal and other material through which the liquor gradually descends in a limpid, gently-flowing current into J, the final receiver or store cask. K is a tank or large vessel for holding warm water for distilling purposes, supplied from the top of the worm-tub, the heat of which is supported by steam from the tube *c* connected with the boiler, and having a stop-cock for regulation at *e*. The tank is a reservoir for supplying the mash-tubs with water, of which in the concern there are 14, each measuring 3 feet 4 by 3 feet 6 inches in diameter, ranged on a loft above the stills, in such a manner that after the worts have undergone fermentation in these tubs, they are let down by a leader or trough into the second still C at *g*. When the first charge is worked off, the remainder is let into the first still and the second still is charged from the mash-kieve. To facilitate the operation, there are pipes with proper stop-cocks from still to still, such as that at *f*, and it will be perceived that the whole process of distillation is effected by means of steam admitted through the tube *d*, projecting from the main upright pipe of the boiler into the first still, B, and so proceeding by other pipes through the other stills. The tubes which convey the steam into the stills, descend to nearly 3 or 4 inches of the bottom.

All the vessels and pipes, as well as the stills, are made of pine; the pipes are 9 inches square with a bore of $2\frac{1}{2}$ inches in diameter. The steam-boiler is 7 feet deep, the height of which, at the fire-place, is 8 feet, and it is supplied by water from the worm-tub by the pipe *a*, regulated by a stop-cock or ball of lead which is worked by the cord *b*. It is not necessary to describe the other vessels of this concern, as they are similar to those employed in the distilleries of Scotland and Ireland. The greatest disadvantage attending this apparatus, is the liability of the timber becoming soon unserviceable when the operations are discontinued for any time; but

in a country like Canada, where wood is so plentiful, this inconvenience is easily remedied.

The wash is usually made from rye, wheat, or Indian corn, with a mixture of one-twentieth part of barley-malt, or one pound to the bushel of mixed grain: some use more. This is ground or crushed in a mill, and then mashed with water at a heat from 158° to 162°, others go so so high as 180° and 190° Fahrenheit. The mashing continues till the material is well mixed, and the quicker the mashing, it is considered the better. When mashed, a cover is immediately put on the tub or tubs, or kieves; in order to preserve the heat as much as possible. The mash is then allowed to remain, with an occasional stir of the rakes, for about two hours, until the liquid attains its proper sweetness; at this stage, cold water is added to reduce the heat to 60° or 64°, but mostly to 70° and 74°, when yeast is added. This yeast is home-made, in country places in particular, but in the towns it is usually procured from brewers. The tubs or kieves are again covered and allowed to stand until completely fermented, when the operation of distilling commences. The grains and all are put into the still.

Brewing and distilling are generally carried on in the Canadas from the beginning of October till May. Every person is at liberty to distil as much as he pleases on paying 3*s*. 9*d*. for the annual registry or license of his still, besides 1*s*. 3*d*. per gallon on its contents; yet it is asserted that excess in the use of spirituous liquors is not common, particularly in country places. Distillers are not allowed to sell in quantities less than three gallons without a license, which is obtained from the clerk of the court of the district, and is termed "a store license." For an offence against this regulation, a fine of from £5 to £25, according to the culpability of the offender, is imposed, on the testimony of a credible witness. The half of this fine was at one time given to the informer, but latterly he gets nothing. Spirits thus made are commonly sold at from 1*s*. 8*d*. to 2*s*. 6*d*., Halifax currency, or about 1*s*. 4$d\frac{1}{2}$. to 2*s*. 1*d*. sterling, per wine gallon. The spirits is generally of an inferior strength.

No duty is charged on malt in the Canadas; and the distillers have, therefore, every encouragement to make use of it in what proportion they may deem necessary for the production of a good and palatable spirit: the ale made from it is celebrated in the West Indies.

Hops grow in abundance, but particularly flourish in the London and Western districts of Upper Canada. Besides this native supply, quantities are brought from the States and sold generally in bales at from 11*d*. to 15*d*. (Halifax currency) per lb.

The Dutch settlers cultivate apples to great extent, and make a corresponding quantity of excellent cider, the climate being extremely favourable to the growth of this fruit and that of melons. Culinary vegetables arrive to great perfection, as well as most of the European fruits. Currants, gooseberries, and raspberries are very fine; the latter are indigenous and found every where. A sort of native vine is also very common, bearing poor sour grapes not much larger than currants. In almost every part of the country, are to be found two species of the sugar-maple, one is called the swamp-maple, from its being found in the savannahs or plains, the other is called the mountain, or curled-maple, from its growing on hills or high dry grounds and also from the grain of its wood being beautifully variegated with stripes and curls. The swamp-maple yields more sap than the mountain-maple, but affords less sugar; two or three gallons of the one producing as much as six or seven gallons of the other. The maple juice is collected in the early part of the spring, which is a laborious business, as it is obtained from a vast number of trees widely dispersed over a great space of ground, and the approach to which is difficult in consequence of the snows. The process of making the sugar is nearly the same as in the States. The juice when boiled is thrown into vessels where it cools in the form and consistence of cakes, and is sometimes mixed with flour, which renders it thick and heavy; but this is to augment the weight and is considered necessary. It is seldom clarified, though in Upper Canada, it is often made very white and nearly equal to loaf sugar. These cakes of maple-sugar are so hard that they must be scraped down with a knife the better to enable them to dissolve in fluids, and the flavour strongly resembles Canadian horehound, besides which they are said to possess strongly medicinal qualities.* A sampleof the common maple-sugar given to me by a settler, manufactured by himself, resembles the brown sugar of Jamaica; but is more strongly granulated, and without any other peculiar characteristic. A large quantity of this sugar is annually manufactured, but not to that extent which the country could afford, owing to the cheapness of the article imported from the East and West Indies.

In the making of maple-sugar, in order to render it as white as possible, it is customary, after the molasses has been partially drained off from the tubs, to lay a piece of cotton cloth over the sugar and apply a cake of rye dough, about one inch thick, which causes the

* Lambert's Travels through Canada and the United States, vol. i. p. 83.

dregs of the sugar to rise and adhere to the cloth, which must be occasionally removed and cleansed, until the sugar has been fully purified.

Rum might be manufactured from the maple sugar, but that liquor is principally brought from the West Indies. The great consumption of foreign spirits lessens the demand for those distilled in the province, the French settlers preferring the imported article.

The following are the imports (in gallons) of the different kinds of liquors at Quebec, Montreal, Gaspé, and New Carlisle, for seven years:—

	1829	1830	1831	1832	1833	1834	1835
Madeira wine	15,353	16,160	32,669	22,327	35,200	23777	17217
Port . .	39,394	44,809	56,619	79,592	78,800	62157	93257
Teneriffe .	24,590	66,781	29,049	94,227	40,750	46175	23872
Fayal . . .	1,971	2,090	532	100	4,252	... ...	83
Sicilian and Spanish	17,991	152,049	165,172	131,721	430,000	218731	81242
Other kinds .	55,122	58,368	66,011	62,376	91,000	50177	51771
Brandy . .	86,607	81,629	64,215	183,613	296,000	140300	273350
Gin . . .	13,873	67,124	73,414	60,520	160,000	71530	92406
Rum, Whiskey, &c.	1,133,150	1,449,758	1,428,283	1,099,578	1,082,000	915988	994191

In 1836, the following were the prices of the several beverages in consumption in the principal towns of Lower Canada:—

	£	s.	d.		£	s.	d.
Wine—Champagne per doz., from ...	0	65	0	to	0	72	0
... Claret, do. ...	0	50	0	...	0	60	0
... Madeira, per 110 gallons, ...	50	0	0	...	80	0	0
... Port, per 130 do. ...	40	0	0	...	70	0	0
... Figuiera, per do. ...	25	0	0	...	0	0	0
... Sicilian red, per 120 gallons, ...	8	0	0	...	10	0	0
... Sherry, first quality, 130 gal....	25	0	0	...	60	0	0
... Common, per gallon, ...	0	3	6	...	0	3	6
Spanish red, first quality, 120 gals. ...	8	0	0	...	9	0	0
Do. common, do. ...	6	0	0	...	7	10	0
Teneriffe, L. P. do. ...	35	0	0	...	36	0	0
Cargo, do. ...	12	10	0	...	15	0	0
Canadian strong beer per gallon, ...	0	1	0	...	0	1	3
Table do. ...	0	9	6	...	0	0	0
Brandy—Cogniac per gallon, ...	0	5	3	...	0	6	6
... Bourdeaux, do. ...	0	4	6	...	0	4	9
... Spanish, do. ...	0	3	9	...	0	4	3
... Canadian, do. ...	0	3	6	...	0	3	9
Hollands—Pale in casks, do. ...	0	4	6	...	0	0	0
Montreal gin, do. ...	0	3	6	...	0	0	0
Do. Whiskey, do. ...	0	2	6	...	0	2	9

	£	s.	d.		£	s.	d.
Montreal, made in imitation of Scotch,	0	5	0	..	0	6	3
Rum—Leeward Islands, (1 *a* 5) do. ...	0	3	3	...	0	3	4
... Demerara, (1 *a* 4) do. ...	0	3	4	...	0	3	6
... Jamaica, (1 *a* $2\frac{1}{2}$) do. ...	0	4	0	...	0	4	1

The number of inn-keepers in Lower Canada, in 1836, was 1180, and of spirit stores 966 ; while the distilleries amounted to 85. The import duty on wine, rum, brandy, and gin, is 6d. and on whiskey, 3d. per gallon, as an encouragement to British manufacture.

The number of inn-keepers in Upper Canada, in 1836, exceeded (according to Evans,) 1007, whose licenses varied from £3 to £10 ; and there were 1063 merchants' shops, besides 138 storehouses, in most of which spirits were sold. The license for selling spirits and wines in quantities not less than one quart, was £5. 3s. The penalty for selling without a license, or less than the regulated quantity, was £20.

The stills as measured by gallons in the several districts of Upper Canada, in 1836, were as follow :—

Eastern, ...	unknown	Prince Edward, ...	150
Ottawa, ...	120	Newcastle, ...	1463
Bathurst, ...	352	Toronto city,	uncertain
Johnstown ...	228	Home, ...	967
Midland, ...	848	Gore, ...	824
Niagara, ...	425	Western,	uncertain
London, ...	1089		
		Total,	6,466

From the increase of emigrants, Canada is fast advancing in agriculture and commerce ; the exports of grain to England alone, are said to have been, in one year, nearly three millions of bushels. Besides wheat, barley, rye, oats, &c., buck-wheat is reared to considerable extent in Lower Canada. At present there are upwards of 107,000 acres under cultivation of this grain, and large quantities are consumed in the distilleries. In the States, buck-wheat is much grown, and cakes made of its flour are the bread most in consumption at breakfast : in this custom they resemble the Japanese. This grain is also in use among the distillers of the Union. In Canada, Indian-corn has been found an uncertain crop, owing to the coldness of the climate, and the hardier grains are those most in requisition.

The beet-root, or mangel-wurzel, is cultivated, but not to any extent ; although it is reared in the United States to such advantage, that they, in the present year (1837), have sent a deputation to France in order to ascertain the best mode of extracting sugar from it.

Wines are manufactured from the different fruits which are common in the country. From frosted potatoes, the Canadians manufacture a good wine, especially if the potatoes are not so much frosted as to become soft and watery. They crush them to a pulpy consistence, and to each bushel add ten gallons of water, which is first prepared by boiling for one half-hour with $\frac{1}{2}$lb. of hops and $\frac{1}{2}$lb. of common ginger. This mixture is thrown upon the potatoes in a suitable vessel, and allowed to stand for three days, after which a little yeast is added. When the fermentation has ceased, the liquor is drawn off into a cask clear of the dregs, when $\frac{1}{4}$lb. of raw sugar is added to every gallon which the cask contains. Here a partial fermentation takes place, and after three months it is deemed fit for use. Some add the sugar in the first instance.

The distillers make whiskey from potatoes when injured by frost, and allege that they produce a greater quantity and a finer quality of spirit than if they were used fresh; the frost having more strongly developed the saccharine principle. To promote the fermentation, about one-fourth of malt-wash is added; care, however, should be taken to allow the malt-worts to ferment at least six hours before the potato-wash is added; otherwise the potato-wash, which runs quickly into fermentation, will be sooner ready for the still than the malt-wash. Hence the effect would be to generate an acid which would render the spirit coarse, and, when diluted with water, produce a milky or bluish colour, offensive both to the taste and to the eye.

The Canadas afford a sufficient supply of honey for the manufacture of mead, though wild and not of first rate quality. In the hollows of the trees in the woods, bees' nests are abundant, but these sweet treasures are unsought for by any but the bears. Chateaubriand asserts, that bees are imports, not indigenous, in the New World, and that they were emigrants with Columbus. "These pacific conquerors," he says, "have robbed the flowers of the New World of such treasures only as the natives knew not the use of, and these treasures they have employed solely to enrich the soil from whence they derived them. What a happy world if all invasions or conquests resembled that of those children of the sky!" On the contrary, Dr. Dwight affirms that the honey-bee is a native of America, since it was found in the forests too early, and at too great a distance from European settlements, to have been derived from importation.

Among the drinks of the Canadians, spruce beer is in considerable repute. The mode of making it is, by first boiling the shoots, leaves, chips, and cones, of the black pine tree in water, to which highly-dried rye, barley, or maize-meal is added. The mixture is then

fermented by means of barm, but in order to overcome the resinous flavour of the fir, sugar, or molasses, is superadded. This liquor, which is fit for drinking on the second day, is of a fine amber colour; it is diuretic, wholesome, agreeable, and will keep for a length of time without becoming acid, owing to the influence of the resinous principle of the fir. A more simple mode is practised in Lower Canada, namely,—The top branches of the spruce tree are boiled, and molasses added to the liquid, and then fermented, after which it is commonly bottled and fit for use.

As country taverns are numerous, they are generally established on the public roads during the summer; but in the winter, temporary wooden establishments are erected on the rivers which are then frozen, and are the public thoroughfare of travellers. Sometimes fatal accidents occur by sudden thaws and floods, by which these floating taverns are swept away with their inmates. The trunks of trees are sometimes scooped out and made convenient resting places, having accommodations for travellers; they are so large as to admit of being moulded into temporary dwellings. An inn of this kind was made in a sycamore growing on the banks of the Mohawk river, in Oneida County. When cut down, it took 31 yoke of oxen to remove it, though denuded of its branches. It formed a saloon, was handsomely furnished, and sufficiently capacious to contain upwards of forty persons.

The numerous hordes of savages who wander through the vast woods and deserts of this great continent, use, for the most part, beverages either made by themselves or furnished by their civilized neighbours. Their propensity to intoxication is in general very strong, but their poverty prevents them from indulging in it. Brandy, says Kalm, has killed more of them than any of the diseases with which they have been infected. That liquor was unknown to them before Europeans visited the country. To die by drinking brandy was considered a desirable and honourable death. A savage being asked by a French officer what he thought this drink was made of, gave for answer—"It is made of *tongues* and *hearts*; for when I have drunk of it, I fear nothing, and I talk like an angel." These kind-hearted creatures, when a stranger appears among them, conduct him to a hut where he is presented with the calamut of peace, and a bowl, sacred to friendship, filled with maple juice, when after having taken his pleasure of the liquor, the host quaffs the residue as a pledge of future confidence and alliance. When they assemble together for any purpose, they never separate without a drunken revel, which

often continues for several days. Regardless of what may be the fatal effects, they continue till the last drop is exhausted.

One very extraordinary meeting, at which a great deal of the native and foreign beverages is consumed, is termed the *feast of the dead.* It is peculiar to all the American savages residing in the Gulf of Mexico, the Mississippi, and the Ohio, and is strikingly worthy of attention. During the feast, which is probably a remnant of Mexican superstition, the bodies of all who have died since the last solemn festival of the kind are taken out of their graves, though they may have been interred at the greatest distance, and brought to the carnival or rendezvous of carcasses. It is not difficult to conceive the horror that must be excited by this general disinterment, but the enthusiasm of the Indian mind renders it insensible to that feeling. When the feast is over, the dead bodies are again interred; and some individuals perform incredible journeys with their deceased friends on their backs to deposit them in the grave from which they had been raised.* This ceremony of respect, though so rudely performed to the memory of departed friends, is in coincidence with the annual festival kept in Bengal, Thibet, and other Eastern nations, in honour of the dead; and it corroborates the opinion that the Americans are descendants of the great Asiatic family.

The practice observed by many members of the Greek Church in Albania, in Europe, is a further illustration of this fact. They hold feasts at their interments, and have commemorations on the 15th, 21st, and 40th days after, with repetitions at the end of the third, sixth, ninth, and twelfth months; and at the expiration of three years, when the bones are disinterred, washed with wine, tied in a bag, and deposited in a church for three days before they are placed in the cemetery. Even the relatives give entertainments on those occasions in in proportion to their circumstances.†

The Brazilian savages usually meet, on the day appointed for a feast, early in the morning at the first house of the village, where they consume most of the liquor, and make themselves merry with dancing. They afterwards remove to the next house, and then proceed until nothing is left, or until they can drink no longer; the scene that follows this general intoxication is disgusting in the extreme.

Some of the tribes, bordering on the United States sensible of the dangers attendant on such excesses, have wisely decreed a prohibition of spirituous liquors, and one infringing this law is deprived of the

* Bolingbroke, &c. 4to. † Hughes's Travels, vol. ii. p. 85

right of citizenship. The Ricaras evinced great resolution in this respect, refusing, with a degree of indignation, an offer of whiskey from an American party, and testifying surprise that their great father, the President, should send them a liquor which possessed the quality of making them fools. The Muscogulges, in a treaty with the whites, stipulated that the latter should not sell spirituous liquors to the allied nations; these they called "French poison or liquid fire." A warrior of the Kansas tribe exhorted his countrymen "not to drink the poisonous strong water of the white people. It was sent by the bad spirit to destroy the Indians. I have seen its evil effects, but its victims are all gone; like a decayed prairie tree, I stand alone, the companions of my youth, the partakers of my sports, my toils, and my dangers, recline their heads on the bosom of our mother: my sun is fast descending behind the western hills, and I feel that it will soon be night with me. Beware of the destroyer and the magic charms of its influence."

It is remarkable, says Dr. Robertson, that the women are not permitted to participate in the debauches of the Indians. Their province is to prepare the liquor, to serve it about to the guests, and to take care of their husbands and friends, when their reason is overpowered. Although this observation is applicable to some tribes, it is not universally so. A recent traveller assures us, that a drunken Indian and his squaw act more like demons than rational beings when under the paroxysm of inebriation; and that sometimes a whole village, both men and women, is so debased by it, as to bear no inapt resemblance to the infernal regions. The white traders often ungenerously take advantage of such occasions to defraud the Indians, who, when they become sober, seek a desperate revenge either in the destruction of life or property. A gentleman, who was an eye-witness, gives the following description of a scene, that took place after the interment of an Indian of the Occoquan tribe:—

The dance, says he, took place by moonlight, and it was scarcely finished when the chief or principal warrior produced a keg of whiskey, and having taken a draught, passed it round among his brethren. The squaws now moved the tomahawks into the wood, and a scene of riot ensued. The keg was soon emptied. The effects of the liquor became apparent in the looks and motions of the Indians. Some rolled their eyes with distraction, others could not keep on their legs. At length succeeded the most dismal noises. Such whoops, such shouts, such roaring, such yells, all the devils of hell seemed collected together. Each strove to do an outrage on the other. This seized the other by the throat, that kicked with raging fury. And to com-

plete the scene, the whole warrior was uttering the most mournful lamentations over the keg he had emptied; inhaling its flavour with his lips, holding it out with his hands in a supplicating attitude, and vociferating to the byestanders, *Scuttawawah! Scuttawawah!* More strong drink! More strong drink!

Amidst the weakness and depravity into which intoxication betrays those uneducated beings, some admirable specimens of presence of mind and firmness of disposition are related, that would do honour to any country. An old warrior is said on one occasion to have been placed in a very embarrassing situation, through the insulting conduct of a set of drunken fellows that he met accidentally in a dram-shop, on the borders of one of the States. This chief, after taking some drink by way of refreshment, was so affected by it, that he seemed to forget his native dignity, and entered into very familiar conversation with the whites. Advantage was taken of this weakness, and the party insisted on his drinking more, threatening, in case he did not, to drench him with whiskey. The man, with a noble and fearless countenance, turned upon the company, and addressing himself, with a contemptuous and scowling aspect, to the landlord, who was a highly respectable person, said—"No blood when much talk—chattering belongs to women and wild geese."—Then snatching a board on which was pinned a piece of white paper, he placed it at the distance of a hundred yards; and, taking aim with his musket, shot a ball through the centre; reloaded, and repeated the act with the same success. Immediately after he grasped his tomahawk and threw it against a tree, with such force and precision as to cleave the part intended. "Thus," said he, addressing the astonished beholders, "Indian man provide for his wife and little ones in peace—thus defend them in war." The effect was such as anticipated, and his rude opponents retired without offering him further molestation. Another anecdote favourable to the character of the American savages is related by Dr. Dwight. An American called one evening at an inn in the town of Lichfield, and requested of the landlady to furnish him with some drink and a supper, observing at the same time, with great candour, that he could not then pay for either, as he had no success that day in hunting. Both drink and supper were refused, and he was ordered to go about his business for a lazy, drunken, good-for-nothing fellow. The Indian was about to retire, when a man that was present, observed that he appeared much distressed, and showed by his countenance that he was suffering very much from want and weariness. He directed the hostess to supply him with what he desired and that he would pay the expense. Accordingly, drink and supper were served up, which, when the

Indian had finished, he turned with a grateful heart to his benefactor, and assured him that he should remember his kindness, and whenever he was able he would recompense it. For the present, he observed, he could only reward him with a story, which he would relate if the landlady would permit him. She having consented, and addressing himself to his benefactor, he said, "I suppose you read the Bible." The man assented. "Well," said the Indian, "the Bible says, God made the world, and then he took him and looked on him, and says its all very good. Then he made light, and took him, and says its all very good. Then he made dry land and water, and sun and moon, and grass and trees, and took him and looked on him, and say its all very good. Then he made man and took him, and looked on him, and say its all very good. Then he made woman, and took him and looked on him, and he no dare say one such word;" after saying which, the Indian withdrew. Some years after, the man who had thus treated the Indian was captured by a native tribe and carried into Canada, where he would have suffered death but for the interference of an old Indian woman, who adopted him in the room of a son that she had lost in the wars. There he lived for an entire winter, and, in the course of the following summer, when one day working alone in the forest, he was accosted by an unknown Indian, who desired him to meet him on a given day, at a place which he pointed out. The fear of fatal consequences deterred him from fulfilling his engagement; but, soon after, he was again accosted by the same Indian, who chided him for not performing his promise. The man apologized, when the Indian told him he would be satisfied if he would meet him at the same place on a future day, which he named. He complied, and found the Indian punctual to his appointment, and provided with two muskets, ammunition, and two knapsacks, which he divided between them. Bending their course towards the south, they travelled for several days, shooting such game as came in their way, and sleeping by night in the forest, at a fire kindled for their preservation, till at length they reached an eminence which presented a cultivated country interspersed with houses, and bearing all the appearance of civilisation. The Indian stopping short, turned to his companion, and asked him if he knew the ground. "Yes!" replied the man eagerly, "there is Lichfield!" His guide, who had been mysteriously silent during the course of the journey, then reminded him that many years before he had relieved the wants of a famishing Indian in that town, and exclaimed, "I that Indian, now I pay you! Go home!" Having said this, he

bade him adieu, and the man joyfully returned to his own home."*

Dwight, in describing the savages of New England, says, their devotion to strong drink is excessive, and that they will part with every thing they possess for ardent spirits or cider. The pleasures which intoxication excites, vary the dull course of feeling, and impart visions of transport which nothing else seems so well calculated to elicit. To this passion for drink, the poor Indian is chiefly directed by the allurements of the white traders, a great portion of whose profits is derived not only from the sale of the spirits, but from the advantage obtained by them over the natives in the moments of intoxication. To encourage this vice among them seemed a part of their trade, and the Indians, becoming familiar with the licentiousness of these traders, imbibed a dislike and a distrust for all Christians; and hence the difficulties which missionaries have had to encounter amongst them. The extravagance and folly which too often occur among the whites, in their intercourse with the natives, have been productive of great mischief to their moral habits:—ever ready to grasp at whatever would afford immediate enjoyment, they held strong drink to be foremost in the comforts of life, calling it, in the language of the Shakers, "one of God's good creatures." It was a maxim among the Iroquois,that a drunken man ought not to be held responsible for his actions, nor be accounted as a moral agent; hence at times they became intoxicated, that they might quarrel without disgrace, as they never disputed unless when under the influence of liquor; it being considered scandalous for a man to fight when he was sober. An old chief of this nation, being in Albany upon one occasion, got intoxicated to such excess, that in the morning he found himself lying in the streets naked, and, revolting at his self-degradation, he resolved never again to deliver himself over to the power of *strong water*—a resolution he was never known to violate. The fatal effects of ardent spirits among the native Americans, are too well known to require further illustration, indeed these liquors have done more mischief than their diseases and wars combined. Humboldt, however, states, that in the forests of Guiana, on the banks of the Orinoco, the Indians shewed an aversion to brandy; and he met with several tribes who were very sober, and whose fermented drinks were too weak to intoxicate. The missionaries have done a great deal towards the reformation of the natives of North America. Some of them are now preachers, and in many parts of Upper Canada,

* Dwight's Travels in New England and New York, vol. i. pp. 87, 88.

in particular, they will not allow spirits to be vended amongst them.

Kotzebue, in his account of New California, describes the town of Pueblo (a new Russian settlement), as seated in the midst of orchards and hedges of vines bearing luxuriant clusters of the richest grapes; and good wine is consequently obtained. About Ross, another Russian settlement in New California, (lat. 38½°) he thinks that the vine might be cultivated to great advantage, as wild grapes were found in abundance on the banks of the rivers, the clusters large, the fruit sweet and well-flavoured, and eaten without any inconvenience both by settlers and Indians. The *vitis vinifera* of the Greeks and Romans was first planted in California by missionaries in 1769, though they found a species of wild vine bearing large grapes of a sour quality. Since that period, good wine is produced in various districts of the country to a considerable extent. The natives manufacture vases from the stalks of rushes, which they render impenetrable to water by a lair or varnish of asphaltes, and in these they carry wine and other liquors to suit their convenience. When the Californians were solicited to carry on a trade with the Mexicans, they resisted the measure nearly in the following words:—"There is amongst us no quarrelling, nor fighting for another man's property; we live happy and contented; we are trained to valour, not to revenge. How different is the conduct of Christians! They drink *fire* (spirits); they beat their families, assassinate their friends, rob each other, and, under the mask of religion, persecute the helpless, and betray the strong. How then can we suffer Christians to come among us?"

The Californians intoxicate themselves by a species of beverage made from an herb, which they chew in the same way as some of the South Sea Islanders inebriate themselves with *ava*. They also make use of drink from the infusion of the pod of the *mosquite* tree steeped in water. It is naturally of a saccharine nature, and, when fermented, readily intoxicates. Wine is made in some parts of California from the grape, and a spirit from the *Mezcal*, a species of socotrine aloe. In making this spirit, the green leaves of the *mezcal* are cut off to prevent them from giving a bad taste to the spirits. The heart of the plant is roasted in an oven, which is merely a hole three or four feet deep, and twelve feet in diameter. This hole is heated by wood until reduced to charcoal, when stones are spread over it, and when they become hot the *prepared hearts* of the *mezcal* plant are piled on them, and then covered with grass to keep in the heat. When sufficiently roasted, they are taken out and thrown into leathern sacks,

into which is poured a proportionable quantity of water which produces fermentation. In the course of six or eight days, the liquor is fit for the still, and, after double distillation, acquires great strength and is then marketable. The wild bears are so fond of the fermented *mezcal*, that they often visit a distillery to obtain a draught of it, on which a watchman is ever on the look out to prevent their depradations. The vine yields excellent fruit, producing wine resembling Canary. Here also maize and the *jatropha manihot* flourish luxuriantly. Roquefeuil, in his Voyage round the World, describes that portion of California along the San Sacramento river as very fertile, vines growing spontaneously, and maize so productive, as hardly to require any attention. Jewett, in his account of the inhabitants of Nootka Sound, says, that they were unacquainted with ardent spirits before their intercourse with the whites; but they soon became fond of rum, and preferred it to any other liquor. From a people so extremely rude, that their choicest viands are eaten with a profusion of train-oil for sauce, not excepting even the most delicate fruit, strawberries and raspberries, little can be expected, particularly as they knew no other mode of boiling them than that of throwing burning stones into the water. The *yama*, a species of berry that grows on bushes, like currants, of about two or three feet high, is black and about the size of a pistol-bullet, of an oblong shape, and open at top like the blue whortle-berry. The taste is sweet, mixed with a little acidity. The women gather them chiefly on the mountains: great quantities are collected, and, to preserve them, they are pressed, dried, and laid up in baskets for use. Strawberries, raspberries, and blackberries abound; from all of which it is singular that the natives have never discovered the art of extracting any inebriating liquor.*

Leaving the Western World, the first islands of any consideration in the wine and brandy trade in the Atlantic Ocean, are the Azores and the Canary Islands. The Azores are fruitful in grain, and the vine is cultivated so extensively, that the island of Pico alone, according to Captain Mundy, produces 20,000 pipes of wine annually.† The chief vineyards in this island are planted on the sides and base of the peak, which is a conical mountain, giving name to the island, and rising to the height of 7,000 feet above the level of the sea. As the peak was generated by the eruption of fire from the bottom of the ocean, its soil is decomposed lava lying on a stratum of lavatic

* Jewett's Adventures and Sufferings among the Savages of Nootka Sound, 8vo. 1824.

† Pen and Pencil Sketches of a Tour in India, vol. ii. p. 371.

stone. Here the vines grow luxuriantly, and nothing can exceed the grandeur of the decorations on the sides and base of this majestic cone, consisting of gardens, vineyards, and corn-grounds, with groups of people perpetually occupied, exhibiting a wonderful contrast to the rude uncultivated summit of its snow-topt apex. This extraordinary volcanic production has the singular property, that when the peak is struck accidentally, or intentionally, it reverberates sounds causing sensations as if the vibrations were issuing from unfathomable caverns equally unknown as the depths of the ocean that surrounds it.

The wine is of the colour and flavour of Madeira, is cheaper by 50 per cent., and held in great estimation in the West Indies, from its superiority over the wines in a hot climate. On this acccount the colonial merchants keep an agent at Fayal, who contracts for the principal portion of each vintage of the island; some of these are so fertile as to afford two crops in the year, and the export of grain and provisions is so considerable, as, in good seasons, to freight 70 vessels, each from 80 to 100 tons burden. For the preservation of corn, pits are dug with an entrance large enough to admit a man, and to receive about three lasts of corn, each containing 108 bushels of 40lbs. a bushel. Here the grain is stored in July, and secured by a stone-lid with a lock, which is then carefully covered with earth to keep it air-tight. In this manner it is preserved to suit the convenience and meet the wants of the inhabitants. A spurious spirit is frequently imported into these islands from the Brazils, which the common people use in preference to their own wine; but the consumption has been nearly counteracted by the pure West India rum and the liquors of their own distillation.*

The Canaries, which at one time had large sugar plantations, and were the only settlements likely to cope with our colonies in the West Indies, have been long devoted to the cultivation of the vine. The brandies distilled in those islands, particularly in that of Grand Canary, are in great demand in the foreign settlements of the Spaniards and in North America. The island of Teneriffe alone, produces about 25,000 pipes of white wine annually, of which the greater portion is exported, and the remainder is kept either for home consumption, or to be manufactured into brandy.† M. Bory estimates the average produce of wine in this island to be but 22,000 pipes, while the whole of the Canaries are said to yield 40,000 pipes. Among the Teneriffe wines is to be included the *vin de malvasia*, or malmsey, a very rich and luscious sack, which was, in the seventeenth century, a great

* History of the Azores, 4to. p. 294.

† Staunton's Embassy, vol. i. p. 88.

favourite in England. *Sac* was the beverage so highly prized by Falstaff, and administered to the dying Lefevre, by the philanthropic and warm-hearted hero of Sterne in his Tristram Shandy. This wine was denominated Malvasia, or Malmsey, from the name of a town in the Morea, and supposed to be a corruption from Malea, the ancient name of a portion of Laconia, in the Grecian Peleponnessus. Various reasons have been assigned for the application of the term *sac*, some referring it to one origin, and some to another. Whether *sac* be a corruption of the word *sec*(dry), or is derived from Xeque, a town of Morocco, where this wine was produced in abundance, or else from being made from half-dried grapes, as was frequently the practice, or from the skins, *sacks*, or bags, in which the Spaniards preserved their wine; or from *sacco*, (saccus in Latin) the Spanish for a linen bag, or that *sac* signified a white wine as being clarified by filtration through a linen bag, as was the case with some of the wines of the ancients, must ever remain a matter of mere conjecture, or of hypothetic assumption. For the probable derivation of the term (sack), which has caused, perhaps, more research than the matter deserves, the reader is referred to page 239. Sweet woods are so plentiful, that the common utensils of the vineyards, as well as the wine-casks, are made of them, which are said to impart to the liquor an odoriferous flavour. A view of the quantity of wine shipped from the Canaries to Great Britain, for a series of years, will be found in a Table of the Addenda.

The island of Madeira is remarkable for being the first place in the western hemisphere, in which the *Arundo saccharifera*, or sugar-cane, was cultivated. Little sugar, however, is now raised in this island, the grapes engrossing the whole attention of the inhabitants. The little sugar that is made is uncommonly fine, and said to emit an odour similar to that of the violet. It is a boast of the inhabitants that they have the best wheat, the finest sugar, and the finest wines in the world, besides the clearest water, the most salubrious air, and a freedom from all noxious animals. The vine was introduced into Madeira from Cyprus, by Prince Henry of Portugal, some time previous to the year 1445, or, as Chaptal has it, to 1420. The cultivators say, that the varieties of this plant in the island are unlimited. The best wine is that made in the south; the wines of the north are very inferior, and remarkable for their acidulous qualities. What is called *Tinta*, or *tent*, resembles Burgundy, when new, both in colour and flavour. Age gives it the appearance of port: it is the only red wine made on the island, and, to fix its colour, it is allowed to ferment with the husks of the fruit; but a great portion of it is mixed with other wines. Here it may be remarked, that in making

Madeira wine, grapes of every description are mixed together, except the Malmsey and Sercial grapes. The former affords a wine superior to any sweet wine, and the latter, another preferable to any dry wine, combining, as a late writer expresses it, with the ordinary richness and flavour of the Madeira, an ærative property and stimulancy, as it were of spirit, that leaves nothing to be desired: the grape from which the sercial is made, is said to have come from Hockheim. The *Bual*, another wine of a rare grape, is excellent, and said to be of Burgundy descent.* Of Malmsey there are three kinds, the fermentation of which is checked at an earlier stage than that of any other description made in Madeira, in order to increase its richness and sweetness: about 500 pipes of Malmsey are the annual productions of this article alone. It is calculated that one pipe of wine to an acre is the average produce of the vineyards of the island, making in all, according to Staunton, about 25,000 pipes, of 120 gallons each.† This produce, however, must vary in proportion to the favourable or unfavourable nature of the seasons. In 1813, the produce of the whole island was 22,314 pipes, of which 101 went to the Bishop; that of Porto Santo, was 695 pipes;—according to Walsh, who visited this island in 1828, the produce was about 30,000 pipes. In the management of the vineyards, the practice is much the same in Madeira as in France, and the other wine countries of Europe. The propagation is by cuttings, and it is only about the fourth year after planting, that the fruit produces wine. It was not until after disappointments in the produce of the grapes, that the inhabitants were persuaded to engraft their vines, a practice which has since proved to be of great advantage. The vines are supported on trellis work of cane about three feet from the ground. Grapes grow in Madeira, at an elevation of 2,700 feet above the level of the sea, but no wine can be made from any reared at a greater elevation than 2080 feet. The stony and poorest soils produce the best wines, resembling in those respects, the vineyards of the Rhine, where the vine grows among the dry shingles with scarcely a particle of mould. The mode of obtaining the juice from the grape is pressure with the feet and arms on the fruit, when collected and placed in a trough, or reservoir, constructed for the purpose. The stalks are afterwards subjected to the force of a lever, which, acting on a board, causes the remaining fluid to exude, and thereby increase the quantity of the *must*. Sufficient care was not taken for a long time,

* Rambles in Madeira and Portugal, 8vo. pp. 155, 156.

† Staunton's Embassy, vol. i. p. 52.

in Madeira, to separate good grapes from those of an inferior quality; and hence the produce was often of an indifferent description. Of late years, however, the greatest possible care has been taken to select the best fruit for the wine-press; and to that is owing the character of the wines of this island. The general average growth is from 25,000 to 30,000 pipes, the annual exports of which are said to be from 15,000 to 16,000 pipes; 7,000 of these are sent annually to England, 3,000 to America, and 5,500 to India.

Madeira wine will not bear the sea without a powerful admixture of brandy; and this is generally added, immediately after the fermentation, and before it is refined with isinglass. But this operation is often performed in England, after which it is termed *London particular*, and the brandy is added more or less, according to the climate for which it is designed.

In the making of the wines, gypsum is used to clarify and mellow them, but how far this practice is valuable, must be for the consideration of those conversant with the manufacture. When one or two of the planters have taken in their vintage, which happens in September, all must immediately follow the example; otherwise the rats, the lizards, and the wasps, would commit great ravages, being the principal enemies to be encountered. Besides those, the dogs have to be chained, or muzzled, to prevent them from devouring the grapes, of which they are so excessively fond. The brandy used in the vineyards is made chiefly from the wines manufactured in the north of the island, and from the lees of the several vintages. The streets of the towns in Madeira, particularly those of Funchal, the capital, are exceedingly steep and paved with small stones, set edgewise, which render the way sharp and slippery. To carry burdens up those ascents, a small breed of bullocks are trained for the purpose, and yoked two a-breast. In the removal of wine, as well as of other articles, a slide capable of holding two casks, is attached by ropes to the bullocks, which are guided by a peasant with a prong, and having a cord running through the tips of their horns, by which they are managed. Another person keeps the slide constantly moistened with a wet cloth, by which it glides along freely. The skins of goats and calves are dressed whole and inflated, preserving the shape and size of the animal, and employed for carrying water and wine occasionally.

Flowers and shrubs being abundant, bees are numerous, and honey is to be had of the finest description. The people are so particularly careful in their treatment of those insects, that they extract the honey from the hive without killing any of them. This is effected by means of a tube filled with dry cow-dung, which being ignited, the

smoke is driven into the hive, and the bees forced from their cells, to which they return their labours, after being deprived of their former treasure. Mead, however, forms no part of the native beverages, though it might be manufactured to an extent capable of supplying a larger population.

For an account of the extent of the wine trade of Madeira for several years, see the table in the Addenda.

As there are not any other islands in the Atlantic, which afford materials connected with this subject, and a survey having been taken of the various beverages, which foreign nations have at different times invented, Europe is next to be considered, as being the most important portion of the civilized world, where the arts and sciences have made the greatest advances, and where luxury is carried to a pitch of refinement hitherto unknown. To the efforts of the Greeks much is to be attributed, and from them the Romans borrowed most of those inventions, the knowledge of which they disseminated wherever their conquests extended. The crusades also laid open to the observations of Europeans, a state of existence superior to their own, that seemed to elevate the human character beyond that of which they had any previous conception. To acquire the luxuries of the East, a spirit of enterprise was excited, and an impulse given to commerce that led men to the exercise of every faculty, which could tend to surpass, enable them to imitate, or serve to procure, whatever was considered in other countries as valuable, rare, or magnificent. To these purposes, the discovery of the art of printing and the application of the mariner's compass contributed not a little.

Of the chemical attainments of the Saracens, a brief history has already been given; but whether to them is to be attributed the introduction of the still into Spain, or to other factitious circumstances, cannot be accurately determined. Anderson, in his History of Commerce, has placed the date of the introduction in the year 1150, but on what authority he has not related. That this art was known at an early period, there can be no question, even supposing that the Saracens were the first who introduced it into Europe. From the writings of Rhazes and Geber, the former of whom resided in Seville, at the court of Almanzor, in the ninth century, it appears that distillation was practised with success in their time, proving that Anderson had not made himself sufficiently acquainted with its origin and progress. When, therefore, this art was so familiar in the ninth, why fix its introduction in the twelfth century, as has been done by the various compilers of almost all our

Encyclopædias; thus resting on the solitary assertion of a writer, who seems to have been little conversant with the subject, and who displays neither research nor accuracy in so important a matter. In a former part of this work, it was shown that the art of distillation was practised by the people of the East, long before it was known to the Arabs; and this is further confirmed by the authority of an ancient Hindu manuscript, cited by the Asiatic Journal, from which it appears that a distilled liquor, resembling brandy, was known, under the name of *Kea-Sum*, from an early period of antiquity. Amongst the African Moors, it was practised with a rude apparatus in the same way, as it is, at the present day, in many parts of the East.

The first spirit of which there is any account in Europe, was made from the grape, and sold as a medicine both in Italy and Spain, under the Arabic term *alcohol*. The Genoese, in the thirteenth century, dealt largely in it, and are said to have acquired considerable sums in the sale of this article, named likewise *aqua vitæ*. They were the first Europeans who prepared this liquor from grain, and they sold it in small bottles at a very dear rate. In 1270, a Florentine physician recommended *spirit of wine*, as possessing great virtues and effecting valuable medicinal purposes. Mariana tells us, that the vine was among the first objects of the early husbandry of the Spaniards; and that although the primitive inhabitants commonly drank water, yet they were no strangers to wine, hence affording them, from the most remote antiquity, an article on which to exercise their inventive powers. If, according to this writer, Tubal, the son of Japheth, were the first man that peopled Spain, after the flood, no doubt the art of wine-making, as practised by Noah, was made familiar to the Spaniards.* Strabo states, that although the making of beer was peculiar to the Egyptians, yet it was common in other countries, where different methods were employed in manufacturing that liquor; and that the ancient Lusitanians (Portuguese,) before wine was plentiful among them, used *zythum* as a substitute, which, of course, must also have been familiar in Spain.

Polybius speaks of a Celtic king of part of Iberia, or Spain, who affected great pomp, and had, in the middle of his hall, golden and silver bowls full of barley-wine, of which every one quaffed at pleasure; a custom that afterwards prevailed in different parts of Europe. The Egyptians, no doubt, communicated the invention of

* Mariana's History of Spain, folio, pp. 2 and 5. Stephen's Translation, 1699.

this liquor to the Babylonians and Hebrews, who, it is probable, transmitted it northwards to the Thracians and Celtæ, both of Spain and Gaul, and thence to the British Isles. Aristotle's notion of this liquor is rather extraordinary. Those intoxicated with it, he says, fall on the back of their heads, whereas those deeply affected with wine fall on their faces. This wine from barley was called Ζρυτον *(bruton)*, by the Greeks, which, in all likelihood, was its original Egyptian or Celtic name, and from the same word may have been derived our familiar term *brew*.

A long period elapsed after the introduction of *alcohol*, before it was used in the preservation of wine. The improvements, which were subsequently introduced in the manufacture, brought the spirit into frequent and common use, and hence it became an article of great value in commerce.

At present, brandy is distilled in almost every province of Spain; but the quantity produced and consumed is much smaller than that of wine, the manufacture of which is carried on to a vast extent. From Catalonia alone, it is computed that England receives annually 10,000 pipes; Guernsey and Alderney, 4,000; Holland and the north of Europe, 20,000. To other countries, 350,000 pipes have been frequently exported. Valencia and Malaga, since the establishment of a free trade to America and elsewhere, export upwards of 12,000 pipes yearly.*

The quantity consumed in the kingdom is very considerable: 5,000 hogsheads, according to Townsend, are required for the supply of Madrid alone, besides 18,000 arrobas of brandy.† From this statement and an inspection of the annual exports to Great Britain, contained in a table of the Addenda, a tolerably correct estimate of the magnitude of the Spanish wine-trade may be formed.

Spain was at one time most extensive in the spirit business, and, it is said, even more so than France; but, the regulations of the government, which obliged the manufacturer to vend his spirits to none but the farmers of the revenue, with a heavy taxation on the article, tended to cripple the trade, and eventually operated almost to a prohibition. At present,one-eighth of the produce goes to the crown, which claims, besides, the right of purchasing the remainder. The provinces, however, to prevent confusion or embarrassment, generally agree upon a composition for these exactions. The greater number of the brandy distilleries are in Catalonia, Valencia, Murcia, and

* Burgoing's Modern State of Spain, vol. iii. p. 277.

† The arroba weighs 25lbs.

Gallicia. At Mataro, in Catalonia, there are six distilleries, and at Villa Franca, twelve. In the entire province are made about 35,000 pipes annually, and in Valencia from 500,000 to 600,000 cantaras of 4 English wine-gallons each. The taverns, in which wine, brandy, beer, and other liquors, are sold, pay a license for the privilege, which, in Madrid alone, amount in one year to upwards of £2,300.

It may be here interesting to detail the process observed by the Spaniards in the distillation of brandy.

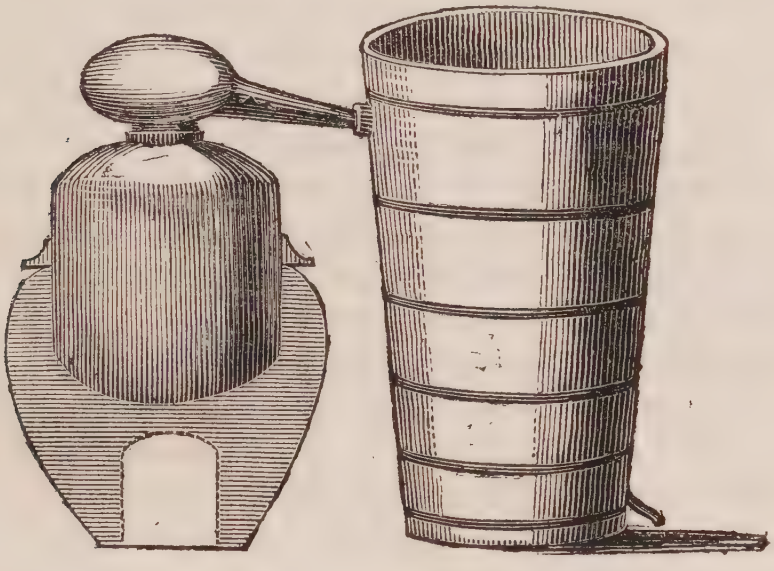
Wine to the amount of four-fifths of the content of the still, is thrown in, the head is luted on, the fire kindled, and in about one hour and a half, the still begins to run, producing a spirit of fifteen per cent. above hydrometer proof, and equal in quantity to one-twentieth of the charge. Afterwards it declines to glass proof, and then to feints. The over proof and glass proof are drinkable immediately, and the feints are either distilled again with the next charge of wine or rectified by themselves. When wines used for distillation are old, heavy, or overcharged with thick substances, and when a very fine clear spirit is desired a quantity of pure spring-water is thrown into the still along with the wine; but this expedient is regulated by the judgment of the distiller, nor is it universally practised. No other ingredient is employed in the distillation of brandy: but liqueurs are scented by different aromatics, of which considerable quantities of a very inferior sort are distilled for country consumption.

Brandy of the first distillation, retains more vinous flavour than when rectified. When the wine is good, and a high proof is not required, the first distillation is preferred. No brandy can be produced from unfermented liquors, nor are grapes, in their natural state, ever thrown into the still. About a gallon of the first run is put in with the feints, rather for being of a low proof, than for any great quantity of the essential oil that it contains, or for any bad taste that it may have. All the art practised for preventing any disagreeable flavour, consists in the skill with which the fermentation of the juice of the grape is conducted, and in a proper management of the fire, that the vegetable essential oil may not be too much raised, nor the volatile salts forced over, in too great a quantity. The spirit, as it comes from the still, is perfectly transparent; but it frequently receives a change of colour from the wood of the cask, or the contrivance of the dealer.

It has always been supposed by merchants and distillers, that a rapid distillation produces a fiery brandy, of a bad, disagreeable, empyreumatical taste; nor, is there any practicable method for pre-

venting the liquid from boiling over, or remaining foul, but a proper management of the fire.

In Spain, stills are made of copper, as also are the heads and worms; but few of them are tinned. Those in general use, with few exceptions, differ little from each other in shape, being cylindrical from the bottom to the shoulder, commonly 33 inches in diameter, and the same in altitude, but about two inches deeper in the centre than at the side. The breast of the still is convex, the head is in the form of a compressed globe, and the pipe, which connects it with the worm, is joined to the lowest part of the circumference, where a kind of gutter, or canal, is formed in the inside, for the purpose of conveying the condensed liquor to the pipe. The worms are small, only two inches and a half in diameter at the mouth of the condenser, and fifteen feet in length, making about five circular turns. A correct representation of the whole is given in the annexed engraving.



The worm-tub is usually from five to seven feet high, and from four to five feet in diameter; some of them are built round with brick and mortar. The furnaces are like ovens, the bottom of the still falling about a foot under the line of the dome, or breast, and about two feet from the ground, on which the fuel is laid, without any grate, ash-pit, or stopper to the entrance of the furnace. The still, when charged with wine, is run off in about fourteen hours; but, when rectifying, in about eighteen or twenty-two hours, wood being principally used for fuel. Distillation from grain is not practised.

The *aloe*, or *pita* plant, is much celebrated in Spain, and, possessing much mucilage, it yields, when fermented and distilled, a good brandy; and were not wine so plentiful, it would afford a supply of

this spirit, sufficient, perhaps, for the country. Sugar is made from the fruit of the *arbutus*, and an excellent spirit is distilled from it.

The excise on brandy was first imposed in Spain under Philip II., in 1590; but the administration and monopoly were given up by Philip V. in 1717, when a duty of three reals vellon* for every arroba of brandy of all sorts was laid both on the exports and imports, and six reals vellon for every arroba of aniseed, cordial, and all other waters.† In 1747, brandy again became a royal monopoly, at which period public warehouses were appropriated for its sale.

According to the statement of an early writer, quoted by Townsend,‡ three and one-eighth gallons of wine, (the amount of twice that quantity of grapes,) as it comes from the press, cost one shilling and two-pence for the labour; and it requires four hogsheads of ordinary wine to yield a hogshead of brandy, Holland's proof; hence it has been inferred, that corn would be a more profitable crop; but the attachment of the Spaniards to the cultivation of the vine has been so long established, that, in many parts of the kingdom, they neglect almost every other kind of agricultural pursuit.

During the time that the Moors had possession of the southern parts of Spain, the cultivation of many valuable plants was introduced; and among the rest the sugar-cane, which has continued to be an object of attention for nearly 800 years. Yet there is no account of distillation of any kind from it,—a circumstance much to be wondered at, since it afforded a material for that purpose of the most substantial nature; and which, it might be thought, was as likely to arouse the exertions of experimentalists, as it had done before in India and various parts of the East. The sugar-canes of Andalusia, as well as those near Granada, are as large and juicy as those of any other country, while between Malaga and Gibraltar there are no less than twelve sugar manufactories.

The Arabians were the first who introduced sugar into medical preparation, and it was then called *Sal Indicum*, or Indian salt, clearly indicating its origin; and the Spaniards and Portuguese afterwards communicated the secret of making it to the West Indies and the American settlements, where the plant itself is said to have been indigenous.

The Moors, during their sojourn in Spain, encouraged the cultivation of the vine, with as much assiduity as they paid to other fruits;

* A real-vellon is equal to $2\frac{7}{8}$d. British.

† The Theory and Practice of Commerce by Don Geronymo. De. Uztariz.

‡ Osorio, who wrote in 1687.

for they were not insensible to the pleasures of the juice of the grape, although forbidden—for forbidden pleasures too often form a main source of the enjoyments of every country. That the Moors drank wine is quite certain, from their luxurious mode of living and the traditions of the nation. This is further confirmed by the circumstance of a circular room in the Moorish palace, in Granada, called the Alhambra, being still shown to strangers and travellers, as a place set apart for men to drink coffee and sherbets, under which were included wine and other liquors.

Vineyards are to be found in every province of Spain, but chiefly in the South and East; those of Valencia, Catalonia, and Andalusia, are the most productive, celebrated, and numerous. In the neighbourhood of Malaga, the mountains are clothed to their very tops with vines. The vineyards are above 7000 in number, producing three crops annually, and keeping 14,000 presses constantly at work during the vintage, which turn out upwards of 80,000 arrobas of wine, of which more than one half is exported. In the district of Axarquia are produced those wines called in foreign countries Malaga, and in England, mountain wine. Another wine produced in the vicinity of Malaga, is the Pedro-Ximenes, distinguished for its delicate flavour, and as being the produce of a grape transplanted from the Rhine. The Lagrima de Malaga is a delicious wine, something resembling Constantia, and the Guindre is but common mountain wine, having the juice of cherries incorporated.* Some exquisite wines are produced from the Valencian vineyards, particularly those of La Torra, Perales, Segorbe, Vinaroz, and Benicarlo; and from the *tintilla* grape of this province a *vino tinto* is obtained, which bears a strong resemblance to the *rota* wine. The Catalonian wines are in considerable estimation; the Malmsey of Sitgas is nearly equal to some Malaga, and the wine of the Priory is of a choice quality. The red wines of this province are inferior to the white, less care being taken in the selection of the grapes, and in the management, fermentation, and refinement of the liquor. In this province, the inhabitants plant the highest cliffs with vines; and, rather than allow a piece of ground to remain useless, descend by ropes from projecting precipices to cultivate spots, which nature seemed to have intended solely for the resort of the eagle, or for the habitation of the chamois. Arragon also affords a good *vino tinto*, especially that obtained from the grape named *grenache*. The muscadine wine of Fuencarl, near

* Jacob's Travels in the South of Spain, 4to p. 246.

Madrid, ranks among the highest order, and the Navarre wine of Peralta, as well as that sort named *rancio*, is in considerable repute. The wines of Andalusia, particularly of the plantations of Xeres de la Frontera, near Cadiz, with those of San Lucar and Trabugena, are of the first character. Paxarete, a place eight or ten leagues from Xeres, gives name to a luscious, palatable, Malmsey wine, the produce of a vineyard belonging to the friars of the Convent of St. Hieronomo. There is also a wine bearing this name at Xeres, which is of equal quality, and in this vicinity the finest sherry is manufactured, a dry description of which, the *Amontillado*, is made in imitation of the wine of Montilla near Cordova. The *Amontillado*, which is little known in England, is a very rare kind of wine of accidental produce, and may be said to be a phenomenon in wine-making, as no cultivator can be certain by what sort of grape it will be produced, or from what treatment it may be obtained.

Of the light wines of Spain, the Valdepenas is, in the opinion of Sir Arthur De Capell Brooke, the best.* The constitution of this wine being remarkably delicate, renders the transport of it a matter of risk and uncertainty; and this is the reason why it is not more common in England. It resembles a light Burgundy, but it is far more delicate and smooth in its flavour, and some think altogether superior. It is difficult to meet with this wine free of that strong and rancid taste imparted to it from the *borracha* or skin in which it is conveyed. This flavour, denominated *olor de bota*, is esteemed by many, who may be considered epicures in wine, and arises from the pitch or other resinous matter with which the skins are secured. Sometimes the vintage of the *Valdepenas* is so abundant, and casks or bottles so scarce, that wine-growers often spill the old wine when it happens to be the produce of an inferior vintage, in order to make room for that of an inferior quality. Mr. Swinburn informs us, that during plentiful seasons, casks cannot be found to contain the wine, and large quantities of grapes remain ungathered notwithstanding, public notice being posted on the church doors, that by giving a small acknowledgment, all who choose may gather. The wines of La Mancha and Manzanarez, though thinner, are next in estimation to *Valdepenas*. Neither the wines of New or Old Castile, are in much estimation, except those made near Valladolid, which, though light, are very pleasing. The wines of Murcia are heavy, rough, and luscious; those made in the plains of Valencia are below mediocrity; but the

* Brooke's Travels in Spain and Morocco, vol. ii. p. 287-8.

vines on the hills which have had the benefit of a southern sun, afford wine of a very good quality. The wine of La Torre is excellent; the wines made at Mos du Marquis de Peralez, are little inferior, yielding an excellent brandy. In the environs of Murviedro, they are of a heavier and richer quality:—in this province also, is manufactured the noted wine called *rancio*.

The wines of Granada are aromatic, and preserve an agreeable flavour, without the richness peculiar to some of the other Spanish wines. The produce of the vineyards of Biscay is characterized as sour and harsh, destitute of body, and of those pleasing qualities which render other wines agreeable. The defects of the wines of Biscay have been attributed more to the mismanagement of the manufacture, than to the inferiority of the grape.

Grapes reared on gravelly soils, produce wines preferable to those reared on rich or heavy soils; and the vines are differently treated in their growth. Some are trained on trellises, some on espaliers, others, like currant or gooseberry-bushes, are not permitted to grow high, and, therefore, gradually form thick and strong stocks, capable of supporting the fruit, poles never being employed for that purpose. In some places, the stalks or cuttings are planted in small hillocks, of about two feet and a half high, and three feet in distance.* The produce of the vines varies according to the soil and the care taken in the cultivation; and the size of the fruit is in the same proportion, so that in some places, a bunch of grapes may be found to weigh twelve or fourteen pounds, while, in others, it does not weigh one half as much.

In the districts of Malaga, three crops of grapes are obtained, one in June, another in the beginning of September, and the last, four or five days after. The grapes of the first gathering called *earlies*, yield a wine of the consistency of honey; those of the second gathering produce a clear wine, stronger and better than that produced by the *earlies*; the third gathering, termed *tardies*, makes the real wine of Malaga.

The Xeres wine, just spoken of, comes from the vineyards in the neighbourhood of that city, called the Puebla district, which extends over a tract of country 45 miles in length, and 18 in breadth, having 555 houses attached to the vineyards. This wine is called Sherry in England, which term is but a corruption of the word Xeres, to render the pronunciation more agreeable. The vines of this district, of which there are several sorts, are usually trained low and close to

* Vide Laborde's View of Spain.

the soil, on account of the heat. The Sherry is made from a grape tinged with a brownish red, of a dry flavour, and devoid of sweetness. From the sweetened juice of the unripe grape, an agreeable cooling drink, called *agras* or *agrace*, is in great request during the summer, and has a pleasing acidulous flavour.

The vintage commences towards the close of September, and is finished about the first of November. From the early gathering, or the least ripe of the fruit, the inferior kinds of Sherry, known by the name of St. Lucar and Manzanilla, are produced, the consumption of which is very great both at home and in England. The real sherry wine is procured from the full ripe grapes of Xeres. Should the grapes be gathered in a wet season, particularly from young vines, the quality of the *mosto*, or juice, is assisted with wine boiled down and mixed with it, previous to the fermentation taking place, by which means the deficiency of saccharine matter, arising from wet weather and want of sun, is made up :—about two jars of this boiled wine is added to each butt of *mosto*. In making sherry wines, there is an indiscriminate use of red and white grapes, which are gathered, dried on mats, and, when freed from the stalks and bad fruit, are put into vats, in which they are trampled on by the peasants, having heavy wooden clogs, or shoes with nails made for the occasion. After this operation, the entire mass is submitted to the action of a screw-press, turned by the peasants. Previous to this, a quantity of burned gypsum is strewn over the surface ; the must is next collected into casks, in which it is allowed to remain nearly two months in store, for the object of fermentation. When the process has ceased, the wine is drawn from the lees, and then receives an addition of brandy, by way of giving it body and ardour. If the ripe bunches of fruit at first selected, be not sufficient to yield a butt or two of *mosto*, they are left on mats exposed to the open air, until enough is obtained by the ripening of the remaining fruit. Less wine is procured from the grapes thus exposed, but the quality is better ; while, from the same gathering, two descriptions of wine are obtained by two different pressings. The juice of the first pressing is called *yenas*, or first fruits, that of the second pressing, *agua pies* ; and when brandy is not to be made, there is sometimes a third pressing called *esperigo*, or *speregou*, in order to augment the quantity. In wet seasons, *yesso*, or quick-lime, is used for absorbing the superabundant moisture. Immediately when the pressing of the *mosto* is over, it is put into clean butts, and after the fermentation has ceased and the liquor appears clear, it is racked off into other casks well cleansed and smoked with sulphur. In the following spring, when the second, or,

as it is called, the insensible fermentation, has taken place, it is again conveyed into other casks, but there sulphur is not smoked; and, in autumn, when the heat of summer has subsided, the same operation is a third time repeated. The following spring, the wine is again removed into fresh casks, when, if found weak or sickly, a jar of brandy is added, the wine being now eighteen months old. The wines of Xeres may be chiefly divided into two kinds, the dry, or sherry, and the sweet or muscatel, and Pedro Ximenes, the latter of which is more generally known by the name of Paxarete.

The wine trade at Xeres was some years ago confined to a few individuals, but there is now great competition in the market, numbers having embarked in it a large capital. At Xeres, nothing so much surprises the stranger, and is more worthy of inspection, than the *bodegas*, or wine-vaults, a term ill-suited to convey an idea of those really splendid and extraordinary establishments. Instead of descending into a low, dark, grovelling, and musty magazine like the London dock wine vaults, spacious as they are, you first pass through a street, one entire side of which, for the extent of a quarter of a mile, is occupied by one of these *bodegas;* and entering through large folding doors, you find yourself, to your astonishment, in what appears to be a church of considerable dimensions, with a lofty roof, and divided into spacious aisles. In the centre you see, in large characters, "Bodegas of Jesus," and at the sides, "Nave of St. Andrew, St. Pedro, St. Jago."—Your eye runs along the lower part of the building, and you see some thousand butts of wine ranged along the aisles and against the arched pillars. A delicious fragrance soon convinces you, notwithstanding the pious inscriptions you have been reading, that you are in a place exclusively dedicated to the enjoyments of the body. On entering, you are waited upon by the superintendent of the bodega, who accompanies you through the different aisles, and who explains to you, on passing each barrel, the name, quality, age, and peculiar flavour of the wine within it; and in order that you may understand it practically as well as theoretically, his observations are rendered clear and intelligible by a full glass of the delicious liquor. You proceed slowly through the whole range of the bodega, occasionally reposing, like Bacchus, astride a huge butt, and sipping bumpers of luscious Paxarete, fragrant muscatel, or dark creamy sherry, half a century old. While on the outside, every thing is blazing with the intenseness of the noontide heat; within, a delightful coolness and a soft mellow light prevail; and you fancy you should like to pass the remainder of your days in this pleasant retreat. In this manner you

keep quaffing the nectar which is so liberally supplied to you, until your senses become not quite so cool and collected as when you first entered, and you think it high time to make your retreat into the hot and dusty streets of Xeres. Each wine establishment is conducted by an overseer, who is called the capataz, and to whom is intrusted the purchasing of the different wines from the grower, the selection, and the mixing of them, as also the proving and tasting of the brandies required; in all of which, considerable judgment, skill, and experience are evinced. The interior of one of those large bodegas may be compared to an immense hospital filled with patients, and the capataz or superintendent to the visiting physician. The former goes his daily round, accompanied by one of the superintendents of the bodega, whom we will call apothecary. As he passes each butt, he begins his enquiry into the state of his patient; not by feeling his pulse, but by tapping, which is immediately performed by his attendant, who runs a spike into it, and presents him with a bumper of the contents. On tasting it, he may probably find that the wine is sick, as it is called by merchants, being usually the case with young wines; a jar or two of brandy is, therefore, prescribed for the invalid, and the dose is forthwith administered. A second butt may be found to be equally qualmish, and is relieved in the same manner. The body, or constitution of a third, may probably be naturally weak and delicate; this is strengthened and improved by being mixed with wine which is sounder and stronger: while a fourth may be at the last extremity, so as to require the application of musk. Speaking, however, more seriously, the bodega requires a great deal of skill, constant attention, a nice taste, and a discriminating judgment, in the selection not only of the wines, in improving the delicacy and flavour of the former, increasing or diminishing the body, dryness, and colour, and finally giving such a variety of shades and difference in flavour and price, as may best suit the particular market and gratify the taste and caprice of John Bull.

A recent visiter says, that the more respectable of the wine-merchants of Xeres never ship wine for England, till it has attained the age of two years; that is, till the bulk of the wine has attained that age. But, according to the price it is proposed to bring, it contains a larger or smaller mixture of a more or less expensive wine. The higher qualities of sherry are made up of wine, the bulk of which is from three to five years old, and this is also mixed in various proportions with older wines. Thus, from the gradual mixture of wines of various ages, no wine can be farther from what might be called a *natural wine* than sherry. Brandy is added in very small propor-

tions to the good wine—never in greater quantities than four or five per cent. while they remain in the cellar; and frequently not at all, unless the wine should become *scuddy* or *mothery*; and thus the finest wines are frequently entirely free from it; but, on their shipment, a small dose of brandy is considered absolutely necessary, even to fine wines to make them bear the voyage, as it is said; but, in reality, because strength is one of the first qualities looked for by the consumers. When wines become *mothery* in the London docks, they send them back to be cured, and this curing consists of nothing more than an addition of brandy; perhaps, indeed, it is chiefly effected by the motion of the voyage. The *soleras*, or store-casks, in which the wine is kept, are left with a void of one-fifteenth of their contents, and the access of the air is admitted through a loose wooden bung, which merely covers without closing the aperture. The wine is purchased by the exporters from the growers generally when it is one year old. The whole extent of the Xeres vineyards, which supply the genuine sherry for the British market, amounting to 2,500 butts, does not, it is said, exceed 700 acres. A great portion of the wines exported to England under the name of sherry, and sold by retail under forty shillings per dozen, is either that of Port St. Mary, St. Lucar, or Malaga.

In cleansing the wine-casks, a good deal of thyme is used as a sweetener: a little of this plant mixed with the liquor is considered to impart to it a more grateful savour, besides rendering it sudorific, healing, and restorative;* while red beet is often infused into various wines to improve their colour and appearance.

Around Alicant and the adjacent country, from which is obtained the *vino tinto*, (tintilla) or *tent* wine, are reservoirs erected for holding water for the refreshment of the vines, which must have cost immense labour and expense. One of these, El Pontano, situated between two mountains, within four or five leagues of the town, holds water sufficient to supply the whole district for a year. The walls of this reservoir are two hundred feet high, and at the base upwards of forty feet thick. Another in the canton called Huerta de Alicante, is surrounded by a wall sixty feet in height, and broad enough for three waggons to go abreast. At one time, a stupendous basin near Lorca in Murcia burst, by which 6,000 persons perished, and 24,000 other animals, while the loss was estimated at £2,083,333. In the vicinity of Murcia, two grand reservoirs still remain as monuments of the industry of the Moors, which have stood upwards of 700 years

* Phillips' History of Cultivated Vegetables, vol. ii. p. 382.

unimpaired. Within one league of Merida, in Estremadura, are two very large reservoirs resembling lakes. The country people call them Albufera and Albuera. One of them is ninety feet in length and fifty-one in depth; it is surrounded by thick walls ornamented with two beautiful towers; a fine flight of steps leads to the bottom. The other reservoir is two leagues distant; it is small, but the walls which encompass it, and the great tower which serves it as an aperture for air, are much finer than those of the former. The basins are supplied by rain-water and by springs, and have fish in abundance. The great reservoirs at Constantinople resemble these more than any others of which there is a description. The roof of one of them is supported by six hundred and seventy-two marble columns, consisting of three tiers standing on the top of each other, enclosing a space capable of holding 1,237,939 cubic feet of water. Dr. Walsh, in his narrative, describes another magnificent cistern, scarcely known to the inhabitants of Constantinople, but which existed previous to the Turks taking possession of that city, yet affords the great supply of water to the inhabitants, is called the subterranean palace, and resembles a great lake extending under several streets.

Among the many works of art in Spain, the subterraneous receptacles for grain, called *Siloes* and *Silhos*, are remarkable. These are large excavations which were constructed by the Moors for the preservation of grain to provide against scarcity. They resemble inverted cones, and are cased with freestone. They are dry, secure from damp and atmospheric air, and seem to have been made in imitation of those constructed in Bœtia and other provinces of Carthagena. These public granaries and extensive magazines are termed *positos*, of which there are not less than 5,000 in the country. They are under the regulations of government; and when it is requisite to establish any of these granaries, every landed proprietor is obliged to deposit a quantity of corn proportionable to the extent of his farm. The following year he takes back the corn he had thus deposited, and replenishes the empty granary with a larger quantity; and in this manner he continues to increase annually the stock till a certain measure of grain is deposited. Then every one receives back the whole corn which he has furnished, and replaces it by an equal quantity of new corn. Whenever a scarcity happens, these repositories are opened, and the corn dealt out to the people at a moderate price. In some places, seed corn is also distributed to necessitous husbandmen, who are bound to restore as much in lieu of it during the ensuing harvest.

In a country where so much care is taken in the preservation of

grain, and its distribution is so well directed for the benefit of the community, it might be supposed that the people would be comfortable; but notwithstanding these precautionary measures, added to the extensive cultivation of the vine, many of the farmers are very poor. In the district of Malaga, distress is so great, that it prevents them from making their crop into wine, or waiting to the proper time of vintage. The consequences are, that they are constrained to gather the grapes before they arrive at maturity, and to sell them at a low price, to the great depreciation of the quality of the wines. To prevent these results and to relieve indigent farmers, the council of Malaga established a bank that issues loans to poor cultivators, which enables them to make their wine in the proper season and sell it to advantage.

Although wine-making principally occupies the attention of the Spaniards, yet other beverages are manufactured, among which cider is a favourite in some of the provinces. About the middle of the seventeenth century, the orange plantations in the Asturias and Gallicia were converted into orchards, because the demand for cider was so considerable, as to render its manufacture a profitable speculation. From the Asturias alone, 28,000 arrobas* are sent anually to the settlements in America; the Biscay as well as the Bastan cider of Navarre is deemed excellent. Mead, from the quantity of honey which Spain affords, might be manufactured to any extent, but the wine and cider supersede its use. Honey of a peculiarly nice quality is obtained from the mountain districts; this article, which is in good demand in Italy, is said to owe its aromatic flavour to the rosemary plants, which abound in those mountains, and from which it is collected. In New Castile, the care of bees forms no inconsiderable portion of property. Near Alcaria, and in the mountains of Cuenca, the honey collected is of the best quality, and so abundant that 4,000 arrobas, or 1,000 quintals, equal to $96\frac{1}{2}$ cwt. have been secured in a season. From the *quercus suber*, or cork tree, portable hives are formed by rolling the bark, cut into lengths of three or four feet, into the form of a cylinder, with rests inside, and apertures for ingress and egress, and then placing them either in the fields or gardens. Though honey is not an article of great importance in Spain, yet it was stipulated by the articles of peace in 1715, between the Moors and natives, that a certain quantity of honey should be a portion of the contributions exacted by the Moors.

In Spain, there are but few breweries. On the coast of Biscay, at Santander, there are three, one of which furnishes upwards of

* The arroba of wine contain 947 cubic inches.

200,000 bottles of beer, for the consumption of their foreign settlements. Little of this liquor is consumed at home, wine being the principle beverage. Grapes pay a tithe or duty, first as fruit, second as wine, third when converted into brandy or vinegar; hence the importance of their cultivation to the farmer, the trader, the clergy, the government, and the bulk of the people.

The Balearic islands, being contiguous to Spain, and forming as it were a portion of the Spanish empire, may here be properly noticed: In Majorca, vineyards are so numerous that they produce on an average 952,748 arrobas of wine, of which the natives consume 575,630 annually, and distil brandy to the amount of 37,400 dollars, half of which is exported. The quality of wine is excellent, of which the lightest and most delicate are Muscadel, Malvoisia, Pampot, Reda, and Montona. It has been computed that the whole exports of these articles to Spain and America, are to the value of 685,590 livres in wine, and to 177,000 livres in brandy. The quality of the brandy, particularly that distilled at Palma, is considered fine. Here is a distillery for orange-flower water. The vineyards are laid out with great taste, while the rugged and almost inaccessible declivities of rocks and mountains are rendered subservient to the comfort and industry of the inhabitants. The mountain, on which is situated the town of Banalbufar, is a striking instance of the care and enterprise of the natives. This lofty eminence, from top to bottom, is cut into steps, like a flight of stairs, and the earth is supported by little walls of flint and stone, and by this means is entirely covered with beautiful and luxuriant vineyards. The town contains upwards of 6,000 inhabitants, most of whom are employed in making wines of various descriptions.

In Minorca, the soil, though light and stony, is favourable to the vine. Red and white wines are made, and some of both exported, which, with the home consumption, may be valued at £1,600 annually. The honey of this island is of prime quality, but no mead is manufactured, hence the superfluous quantity is exported. Wheat and barley are cultivated, the grain is not thrashed, but trodden out by asses and oxen on the bare rocks, but the supply is too scanty to permit any distillation.

The small but fertile island of Ivica, produces fine fruit and good wine, but little more than what the wants of the inhabitants require.

The Spaniards are not more zealous in the cultivation of the vine than the people of Portugal. In many of the provinces of that kingdom, the sides of the steepest hills and mountains are converted by means of terraces into vineyards. In most places through the country, the vine grows

like a gooseberry or currant bush, two or three feet high and about three yards asunder. In pruning, all the branches are cut off in winter, leaving only the stump, with the remains of the stem, about half an inch in length. These shoot again, and by the time of vintage are ten or twelve feet long. The best grapes grow about the stump, and so abundantly as to conceal it altogether. The fruit is gathered in August and September, and conveyed to a house prepared for the purpose, having a stone floor, with grooves to convey the juice when pressed out through a tube into a cellar adjoining, where barrels are ready for its reception. The grapes are trampled by human feet and afterwards put under a press, wrought by machinery, where they are again pressed, till all the juice is completely collected, and the fruit becomes a solid mass. From this latter, mixed with an infusion of weak wines after a proper fermentation, spirits are distilled stronger than any brandy, and equal, for the most part, to spirits of wine. The cellars in which the wine is deposited for fermentation, are so very warm, and the inflammable gas evolved from the fluid so highly ignitible, that no candle can be introduced, lest it might take fire and blow up the concern. In 1681, although the wines of the Portuguese were of an inferior quality, large quantities were exported from Lisbon. The English, in particular, encouraged the manufacture to such an extent, that from 1750 to 1755, a pipe of the best quality could be procured for ten milreas, or £2 15s. 6d. of our currency.

During that period, many of the proprietors of vineyards, rather than sell their wines at reduced prices, or run the risk of loss in keeping them, converted the greater part of the poorer sort into brandy. Large portions of this were used to strengthen the wines intended for exportation, and the surplus was either sent to the colonies in America, or bartered for slaves on the coast of Africa.

The taste of the English, says Link, and their fondness for drinking, are evidently the causes that induce the Portuguese to mix so much brandy with the wines. All that they manufacture have now some brandy added, even before fermentation.*

In 1756, the board which was appointed to superintend the wine trade of Portugal, made a monopoly of the brandy distilleries for the provinces of Beira, Minho, and Tras os Montes, and after some time succeeded in procuring the entire management of them throughout the kingdom. This board had the power of regulating and fixing the prices of the different sorts of wines, and even of prescribing the

* Link's Travels in Portugal, p. 371

limits within which they should be manufactured, with the privilege of selecting those proper for exportation, from those fitter for home consumption. This board, now better known by the name of the Wine and Brandy Company, or the General Company for the Cultivation of the Vineyards of the Alto Douro, hold their meetings at Oporto, and are approached in all cases either by petition or memorial, the principles on which it was founded being now greatly modified and almost abandoned. No wine could be sold or brandy distilled but by their permission. All duties were laid on and levied by them, as well for what was manufactured in the country as for the spirits imported; but it has now in a great measure ceased to enforce its right to this monopoly. Experience has proved that chartered companies have, for the most part, been productive of injury to trade and commerce, and have tended much to the obstruction of improvement in manufactures, enterprise, and general industry: of this the company just spoken of is a striking exemplification, as it failed in accomplishing any one of its purposed objects.

The chief wine districts of Portugal commence 50 miles from Oporto, clothing in picturesque beauty the banks of the Douro. The Rev. W. M. Kinsey, speaking of the cultivation of the vine in the upper Douro, says the process is perfectly simple The vine plants are pruned about December, when nothing is left but very small twigs, similar to those planted in other parts of the country. As soon as vegetation has commenced, the earth is loosened about the stems; and this process is frequently repeated till the blossoms appear. In some places this practice is found requisite with the view to an increase of produce acting on the richness of the soil, by intermingling plants more abundant in alkali; but this is contrary to the regulations of the Wine Company; and indeed, although a larger stock of grapes is produced by this system, they acquire a taste peculiar to the herb, which has been sown for the purpose of serving as manure to the vineyard. Skill and attention are required on the part of the cultivator after the plant has blossomed, and even when the grapes are approaching to a state of ripeness. Either too much rain or too much heat may spoil the grape under the most flattering appearances. A good vintage principally depends on due proportions of heat and moisture, particularly in the spring at the cleansing of the flower, as at an after period, when the grapes are more advanced, cold fogs in the spring often destroy a great part of the growth, and again too much sun frequently dries up the coat of the grape, which does not prove sufficiently succulent for want of rain. Previously to the gathering, the farmers have recourse to water, which they throw into

the lagar, or wine-press, for the mass would not ferment without it. The quality of the wine very much depends upon the care taken to perfect the process of fermentation. The vintage in the upper Douro commences when the grapes begin to shrivel. In these parts it is very difficult and expensive to convey the grapes to the press, the whole district consisting of steep hills and narrow valleys. This process is performed by treading, and a great number of men, assisted by Gallegas, are thus employed at a vintage time.

After the wine has been pressed from the grapes, it is suffered to stand in very large butts until the wine fair, which takes place annually, according to the determination of the Company, either in February or March. Immediately after the fair, the wine is brought down to Villa Nova, and is there defecated or racked off into clean casks, which the Oporto wine-merchants call *giving it clean shirts ;* and an almude of brandy, being in the proportion of about one to twenty-one parts of must, is added to each cask. An additional quantity is mixed with it from time to time, until about two almudes of brandy have been thrown into the pipe, which is, with few exceptions, all the brandy it takes to England. But it has been remarked, that it is too much the custom at Oporto to cleanse the wine of its thicker particles, the effect of which is, not simply to refine it, but to weaken, if not destroy, those natural inherent properties, upon which both the body and the flavour of the wine would otherwise depend. It frequently happens that a well-flavoured wine is deficient in colour; and to bring this up, the brighter wine of inferior vintage is mixed with it. It is fair to presume, therefore, that the distinction of wine into vintages is not so purely true, and so entirely a matter of fact, as an Englishman supposes it to be. Mr. Kinsey quotes a writer who expresses his regret, that the British merchants residing in Oporto do not seem to be aware, that in one single pipe, and much more in a single vat, different *qualities* of wine are to be found at the top, in the middle, and at the bottom.* To heighten the colour of Port, the Portuguese infuse the juice of the berries of the phytolacca, an ingredient much more pernicious than *elder berries,* formerly used for the same purpose : these berries yield a spirit of a harsh and unwholesome quality.

The Portugal vintages are usually conveyed under the distinctions of primary or factory wines (vinhos da Feitoria) ; and secondary wines, (vinhos de Ramo.) The factory wines are again ranked under the head of *vinhos de embarque,* or export wines ; and *vinhos separados,*

* Portugal Illustrated, p. 329, 330.

or assorted wines. The lighter wines are improved by an admixture with the stronger ramo, a purpose for which the latter is commonly purchased. Oeiras, Carcavellos, and Lavradio produce wines of a high reputation, while the growth of Alenquer, Torres Vedras, Lamego, and Monçaon, possess a high character. The wine of Barra-a-Barra, near Lavadrio, is one of the best of Portugal. The vineyards of Coimbra are said to produce inferior grapes of a tart flavour. The Colares Port, a red wine of Colares near Cintra, the white wine of Termo on the Douro, with the wines of Bucellas in the vicinity of Lisbon, and of Setuval in Estremadura, are all in great estimation: the sweet wines of Carcavellos, and the muscadine of Setuval are too familiar to require description or panegyric.

The great exports of wine are from Oporto, or Porto, on the Douro, from the name of which city is derived our term port. The vicinity of Oporto is said to yield annually 80,000 pipes of wine, 20,000 of which are exported, and the whole quantity sent out of the kingdom during the same period is computed at 780,000.* The exports to Great Britain alone, are detailed in a Table of the Addenda.

The bad quality of the native brandy has, hitherto, made it of little commercial importance, but the late introduction of the sirup of the fig will, no doubt, if judiciously managed, improve its flavour and retrieve its character.

No spirits are made from corn in Portugal, but some are occasionally made from damaged figs and raisins unfit for other purposes. In Algarve, the project was once instituted for making spirits from the *carob*, or *locust pod*, but it was not successful.

Many of the stills used in Portugal, particularly those in the neighbourhood of Lisbon, are made in London. The size is arbitrary, varying generally from 140 to 4 or 500 gallons. The body and head are of copper, but the worms are mostly of pewter. The farmers use small stills of a bad construction; a tube of copper, or a musket barrel thrust through a cask, frequently performs the office of the worm and cooler, and the spirits, of course, are bad. In charging the still, the Portuguese fill it to within 8 or 9 inches of the top with wine, which is slowly worked off, and, unless intended for exportation, it is rarely distilled. In the second distillation, it is made of such a strength, that oil will sink in it. White wine yields more spirit than red wine, and on the purity of both depends the goodness of the brandy.

In no country with which we are acquainted, has brandy been

* Playfair's Translation of Boetticher, Table No. 11.

manufactured to such extent or perfection as in France. The distillation of it commenced there, according to Le Grand, in 1313, but as in the instance of Spain, little more was manufactured at first than what served the purpose of the vineyard. Its superior quality, however, soon recommended it to general notice, and at an early period, large quantities of it are mentioned among other articles of European commerce.

It is strange, that although the Phocæans are said to have cultivated the vine in Gaul, 600 years before Christ, we should have no authentic notice of distillation earlier than 1313. The first attempt at the distillation of wine is attributed to Arnaud de Villeneuve, professor of medicine at Montpellier in the thirteenth century.

According to Macrobius, the Gauls had no knowledge of the cultivation of the vine till Rome had arrived at a high state of prosperity. Some Roman wine given by a Helvetian to the Gauls so delighted them, that they were induced to attack the Roman capital with a view to obtain this beverage; but they were repelled by Camillus, and obliged to retire. About 270 years afterwards, Fabius Maximus introduced the use of the vine into Gaul, though some think it was introduced by the Greeks when they were in possession of Marseilles, nearly 500 years before Christ; but, however this may have been, there were no advances in its culture till after the arrival and conquests of the Romans. Beer was the common drink at Paris till the time of the Governor Julian, who, in a Greek epigram, ridiculed the people, because Bacchus did not smell of nectar, but like a goat; and was only a god of oats and barley. He disliked beer, which no doubt led to the introduction of wine in its stead, and, of course, to the more extensive cultivation of the grape His epigram has been thus translated:—

> "Whence art thou, thou false Bacchus, fierce and hot?
> By the true Bacchus, I do know thee not!
> He smells of nectar;—thy brain-burning smell
> Is not of flowers of heav'n, but weeds of hell.
> The lack-vine Celts, impoverish'd, breech'd, and rude,
> From prickly barley-spikes thy beverage brew'd:
> Whence I should style thee, to approve thee right,
> Not the rich blood of Bacchus, bounding bright,
> But the thin ichor of old Ceres' veins
> Express'd by flames from hungry barley grains,
> Child-born of Vulcan's fire to burn up human brains."

The liquors used at the ancient feasts of the Gauls were wine and beer, the latter being the more common of the two. The beer was termed *zythus*, highly valued, and given at their feasts to the warriors

with the best portion of their meats. In the time of the Romans, there were merchants resident in Gaul for the purpose of carrying wine from the southern provinces up the Rhine, and bartering it for slaves. Diodorus Siculus says, that they became so fond of wine, particularly that manufactured in Italy, before it began to abound in their own country, that they have been known to give a slave for a gallon.* Their love of this liquor hurried them into great excesses, and whole armies are said to have fallen victims to their enemies through its direful effects. It appears that Charles the Great was forced to make some severe laws against it, one of which obliged the judges on the bench and the pleaders at the bar to continue fasting. Others forbade that any one should be forced to drink more than he wished, or that the soldiers in the field should invite any man whatsoever to drink upon pain of excommunication, or being condemned to drink enormous draughts of water by way of punishment. When Winceslaus, king of Bohemia, came to treat with Charles VI., at Rheims, in 1397, he got intoxicated every day with the wine of the country, and chose rather to forego every thing than not indulge in this excess.

In ancient times, according to Strabo, a whole vintage has been exhausted at one feast among the Lusitanians. The coryphœus, or chief guest at an entertainment, who conducted the eating as well as the drinking, always began first, and then presented to his neighbour the cup, rather pitcher, which thus went round the circle, for it seems that all drank out of the same vessel, and no man could drink before it came to his turn, or refuse it when it did come: hence, in all probability, is derived the custom of drinking to one another, which was, it appears, common to the Scythians, Persians, Greeks, and Romans, as well as to the Gauls and most of the northern nations. At their feasts, the Gauls, like the Persians, talked upon affairs of state as the cup went round; and, as they generally sat till morning, the liquor was sometimes productive of much disorder, frequently terminating in desperate conflicts. These assemblies were usually accompanied with music, songs, and dancing, and the dancers, who were commonly armed cap-a-piè, beat time with their swords upon their shields. On some occasions, the company dressed themselves in the skins of beasts, and in masquerading habits, many of which were very indecent; but soon after the introduction of Christianity, these practices were abolished. The liquors used on those occasions were beer and wine, the beer being the more common of the two,

* Diodorus Siculus, Lib. v.

because the grape was not then in a flourishing state of cultivation in France.

Pliny and Columella speak of the vintages of Gaul, and of particular varieties of the grape, for which reason the Italian merchants at that time carried on an uninterrupted lucrative traffic with the Gauls. Posidonius, much about the same period, says that the territory of Marseilles afforded abundance of the wines used in the loftier grades of society. Strabo says that the whole of Gallia Narbonnensis afforded every sort of fruit to be found in Italy; but beyond the Cevennes, grapes seldom came to any maturity. The banks of the Cher, Marne, and Moselle, formerly abounded with vines; but from the uncongenial nature of the soil and climate, vineyards have now given place to crops of wheat, rye, oats, potatoes, and other vegetable productions more appropiate to the soil and valuable to the inhabitants. The greater portion of France, however, may be said to be one continued vineyard, since in the culture of the grape, upwards of 4,265,000 English acres are under cultivation; producing annually 893,000,000 wine gallons or 3,563,000 tuns English measure, nearly one-seventh of which is consumed in distillation, averaging in value about 29 millions sterling.

In the cultivation of the vine in France, it is generally kept low, the plants being three or four feet apart, and the rows so separated as to admit of a horse passing between them without injury to them. Plantations are made by dibbling in cuttings of the vines of two feet in length, the earth being pressed firmly to the lower end, an indispensable part of the culture, as observed by Xenophon. In pruning, the branches are cut away till within a foot of the ground, and afterwards the young shoots are tied to short stakes with wheat, or rye-straw, or whatever is least expensive. In the southern provinces, the vine is occasionally supported by the elm or maple, or it is grown without bearers, and the intervals between the rows employed in rearing some other vegetable crop. In some places, the vine is conducted along trellises or bound upon low rails in a horizontal manner: the quincunx order of planting is, however, a favourite. Formerly the wines of Orleans and the Isle of France were more estimable than those of Burgundy and Champagne; but they have never yet equalled the wines of Côte d'Or or the Bordelais. The *vinum theologicum*, or that raised on church lands, was always superior to other wines, the clergy being more solicitous for the quality than the quantity; and from their retired habits and learning, they had greater skill in directing the fermentation of the grape, better methods of improving its produce, greater assiduity and experience in the culture of vines, and

the treatment of the vintage. At present, the Champagne, Burgundy, Dauphiny, and Bordelais wines, are the best in France; those of Languedoc, Roussillon, and other southern districts, rank high as sweet wines well adapted for distillation, but are more characterized by strength than flavour.

The Champagne wines are principally produced in the department of Marne, and, following a distinction that originated in the ninth century, are divided into River wines *(vins de la Riviere de Marne)* and Mountain wines *(vins de la Montagne de Reims)*, the former, a white, the latter, a red wine. The red champagne is brisk and sparkling, and distinguished by an agreeable flavour and aroma; but in the opinion of the first judges, the very effervescent wines are not always the best, much of the strength evaporating with the froth, carried off by the escape of the carbonic acid gas. On this account the less sprightly frothing wines are by some connoisseurs preferred. The white Sillery Champagne wines bear the character of superiority, and the Ay wines are the most celebrated of the river wines; of the latter it is related that Charles V., Francis I., Henry VIII., and Leo X., had each of them a commissioner, who resided at Ay to procure intelligence of the best growth, while those of Verzy, Verzenay, Mailly, Bouzy, and St. Basle, are the most esteemed of the Reims mountain wines. The Clos St. Thiérry furnishes the only red wine that has the rich colour and agreeable aroma of Burgundy, combined with the delicate lightness of Champagne. Those wines are placed in cool cellars, and when well manufactured, will be in prime order from ten to twenty years. The vaults in which they are stored are excavated in a rock to the depth of 30 or 40 feet. The white wines of Arbois and Papillon resemble those of Champagne; and if we believe the anecdotes related by Sully of Henry IV, the Arbois wine was a great favourite with that monarch. Whether Champagne, or Burgundy, were the better wine, was long a matter of disputation among the faculty of medicine, till, in 1778, a decision was pronounced in favour of Champagne.

The reputation in which Burgundy was so long held, arose not only from its intrinsic value, but from its being the favourite of the Dukes of Burgundy, who were, on that account, styled "*Princes des bons vins.*" The vineyards of Romanee Conti, containing little more than six English acres, are said to yield some of the nicest quality:—that of Chambertin, which is said to rival it, was the wine preferred both by Louis XIV. and Napoleon Buonaparte. Next to these in excellence was the wine of the Clos-Vougeot; but since it has ceased to be church property, it has considerably degenerated, and is now

supposed to be inferior to that of Romanèe de St. Vivant, Musigny, Clos de Prémau, and several others. The vineyard of Clos-Vougeot, so long celebrated, is seated on the left side of the road between Nuis and Dijon, and contains about 180 English acres, enclosed by an eight feet wall; in the centre are a dwelling-house and press-house. This wine will not keep beyond twelve years, without losing both its strength and flavour. The vineyard of Clos-Vougeot formerly belonged to the Bernardine monastery of Citeaux, from which it was wrested at the beginning of the Revolution. The Mâcon, or red Burgundy, so familiar in England, comprises both the produce of the Mâconnais and the chief wines of the Beaujolais, forming part of the department of the Rhone. But the white wines of Burgundy are considered amongst the best white wines in France, and the Mont Rachet Burgundy, of which there are three varieties, *Aîné*, *Chevalier*, and *Bâtard* Mont Rachet, are remarkable for their high perfume and agreeable nutty flavour.

The wines of Dauphiny are reckoned among the finest in France, of which those of Vienne and Vivarois are alluded to by Pliny; and the celebrity of the Condrieux, Côte Rôtie, and Hermitage wines is of long standing. The famous vintages of the Hermitage, so denominated from the ruins of a hermitage on the rock on which the vineyard is situated, are gathered immediately behind the town of Tain, on the left bank of the Rhone, about twelve miles from Valence. The Côte Rôtie and Hermitage have a strong similarity in perfume, taste, and flavour, while the wines of Vaucluse, though resembling both, are much inferior. The plants cultivated for red wine are the great and small *siras*, and for white, *marsanne* and *roussanne* grapes. They have no supporters, and are pruned about eighteen inches from the ground. All the grapes are small, though the yearly produce is from fifteen to eighteen hundred hogsheads. The vineyards of Côte Rôtie are on the southern declivity of the hill, to the west of Ampujis, on the right bank of the Rhone seven leagues from Lyons; and the wines, while they resemble the Hermitage, are inferior in point of strength, richness of body, and powerful aroma. Dauphiny produces likewise a wine resembling Constantia, but much more luscious and renovating. In the manufacture of this wine, the richest grapes are selected, and hung up on poles or lines, or else spread on straw for about two months, until they are nearly half dried, from which process the liquor which they produce is styled "*Vin de paille*," that is, "Straw wine."

Languedoc, Roussillon, and Provence produce wines, particularly those denominated sweet, which are of a most delicate flavour, but

not equal to the Hermitage or Côte d'Or. The Beaucaire red wines of Languedoc, (the *cante-perdrix* of Rabelais,) have a bright rose-tint, and the Cornas is a stronger description of wine, having a flavour of ratafia, and it will keep and improve for twenty years. Of a similar description are the red wines of Tavel, Chuzclan, St. Geniez, Lirac, and St. Laurence. The Roussillon red wines, being strong in body and reckoned the most durable in France, are used most for distillation, and for adding vigour to the Bordelais and other weak wines; those of Bagnols, Cosperon, and Collioure, are of the choicest description. The Frontignac wine is long celebrated, the aroma of which is thought to resemble that of elder flowers; the muscadel of Lunel is a delicate wine, less cloying than the Frontignac, while the vineyard of Rivesaltes, about two leagues east of Perpignan, yields the best muscadine wine in the universe. At Salces, a white wine is manufactured from the *maccabec* grape, by which name it is distinguished, and is thought to resemble Tokay, but in richness it is inferior to the Rivesaltes: the Provence wines, however, are of ordinary quality.

The wines of Gascony and Guienne are much esteemed; the vineyards of Lafitte, Graves, Château Margaux, and Haut-Brion, producing some of the best red wines, while the vineyards of Sauterne and Barsac are in considerable repute. In Gascony, the vines are planted in the quincunx order, three feet asunder, and supported by frames borne on props about twelve inches high. The sort most cultivated is the *verdot*. Medoc, which is one of the most famous vineyards of the Bordelais extending along the left bank of the rivers Gironde and Garonne, within two and a-half leagues of Bourdeaux, comprehends, Lafitte, Latour, and other famous vineyards. The plants cultivated for the white wines are the *malbec*, *sauvignon*, *rezinot*, *and semillon*, and are usually trained on poles five or six feet high, and are propagated either by quicksets or layers. The Graves wines were so termed from the nature of the soil that produced them; but they now comprise both the white and red, which grow on the gravelly lands near Bourdeaux. The regulation of the vintage varies in different provinces, according to the whim of the grower, or the long established custom of the district. In the manufacture of the better sort of wines, great care is taken in the selection of the grapes, and even a different management is observed between those of the red and white descriptions; a singular distinction is, that all rotten or unripe red grapes are cast away, and the rotten or over ripe parts of the white grapes are preserved. In some places, the vintage occupies eight or ten weeks; in making the best wines the stalks are rejected,

but no precise time is allotted for the fermentation; and in making the white wines, the grapes are but indifferently pressed and partially freed from the stalks. The wines of Bordelais, celebrated by Ausonius, still maintain a high reputation, of which the red is in greater consumption than the white. The Palus wines, being rough and strong, are generally purchased for the purpose of heightening the strength of other wines. Claret may be accounted a sort of artificial or intermediate wine, since it is a compound formed by the admixture of several other wines, consisting of a hogshead of Bourdeaux wine having incorporated three or four gallons of Alicant or Benicarlo, two quarts of stum wine, with a small portion of Hermitage. The whole compound when sufficiently fretted, after undergoing a partial fermentation, becomes that familiar vinous liquor designated Claret.

Having described the wines of the first character in France, it may be sufficient to say, that of the others that of the finest white are the Sauterne, Beaumes, Preignac, and Barsac; and that of the red wines, Rozan, Gorce, Leoville, Larose, Bran-mouton, and Pichon-Longueville, are of second rate quality. Experience has proved that the oldest vines invariably yield the richest fruit and afford the best wines. In the Clos-Vougeot vineyard, from which issues the most celebrated Burgundy, no vines have been planted during three centuries, but the plants are renewed by laying the old trunks without ever separating the root from the stock or even using any manure whatever. This vineyard contains about one hundred and sixty arpents, from which nearly two hundred hogsheads of two hundred and sixty bottles, value five francs a bottle, are annually produced.

Notwithstanding the natural goodness of most of the wines of France, it has been found useful to heighten the colour of red wine by the fruit of the *vaccinium uliginosum*, a species of bilberry; the juice of this berry, when distilled, yields a strongly intoxicating spirit. In the south of the kingdom, bugloss *(anchusa tinctoria,)* is cultivated for the sake of its roots, which are employed to give a rich red colour to spirits of wine; vintners use them in staining the corks of their port-wine bottles, and in heightening the colour of inferior wines.

The climate in this country congenial to the growth of the vine, does not run equi-distant from the equinoctial, but cuts the parallels of latitude obliquely, so that from 47° in the west to 49½° in the east, seem to be the natural boundary, while in Germany the vines thrive in the 52d degree of latitude. Normandy, Picardy, and Artois, lying without these zones, are not, therefore, wine districts. Other fruit, however, abounds. Orchards are numerous, particularly in

Normandy, and cider seems to be a staple article. The fields in this province are filled with fruit of every description, among which are pears of an enormous size, supposed to be the largest in Europe, and seem, according to Mr. Webster, as if they had been sent for antediluvian giants.* The cultivation of the vine in France, although occupying so much of the soil and the industry of its population, is held by some to be a national evil, by others a national benefit. That both considerations may be true, is reconcileable on the ground that one bad crop produces more absolute distress than can be alleviated by a succession of several good ones, owing to the superabundant population and the minute subdivisions of property; while, on the other hand, the vine renders lands valuable, which, without it, would be of little or no value, and afford neither profit to the owner nor employment to the peasantry. The extension, therefore, of vineyards in France has been considered injurious more from the consequent diminution of the quantity of corn land than from any injury arising from their produce. With this view, Charles IX, in 1567, endeavoured to restrain the cultivation of the vine in order to favour other branches of agriculture, and his measures were still more rigorously enforced by Louis XV. under similar impressions and for similar purposes. The various uses to which the vine is applied are surprising, amongst others, its leaves, dried in the shade and infused in a tea-pot, produce an excellent substitute for tea; and the vine prunings, cut small and mashed in boiling water in the same manner as malt, on being fermented, become a good beverage: if distilled, they produce an excellent spirit of the nature of brandy. The fermented liquor extracted by mashing the tendrils, when allowed to pass the vinous and run into the acetous fermentation, affords an uncommonly fine vinegar.† Wine, in a moral point of view, has, perhaps, been of little injury to the French people; but that perfect sobriety is characteristic of the nation has not been asserted.

The general impression respecting the comparative propensities of the different nations of the world to stimulating beverages, is, that in wine countries, drunkenness does not prevail to such a degree as in those nations where the vine is not cultivated, which has induced many to assert that in France, Germany, Italy, Spain, and Portugal, the people are less prone to inebriety than the inhabitants of Great Britain, Sweden, Russia, Denmark, &c. Travellers of experience inform us that such is not the fact, one of whom, Mr. Cooper, the

* Webster's Travels through the Crimea, Turkey, and Egypt, vol. i. p. 49.

† Philosophical Magazine. No. 119.

distinguished American writer, says that a residence of six months in Paris changed his views entirely. "You will," says he, "judge of my surprise when first I saw a platoon of the Royal Guard—literally a whole platoon, so far as numbers and the order of their promenade were concerned—staggering drunk, within plain view of the palace of their master. Not a day passed that I did not see men and women in the same situation in the open streets. To convince some persons who doubted this, I took them into the streets and satisfied them of their mistake, and on one of these occasions, we passed thirteen drunken men during the walk of an hour, many of them so far gone as to be unable to walk."* The charge of drunkenness against the French has been attempted to be palliated, by alleging that the practice was introduced by the army during the Revolutionary wars, while others assert that there never was a time when drunkards did not abound in France; and Cooper asserts that he saw more instances of inebriety in the streets of Paris than in London. An entire guard of soldiers got intoxicated, and actually arrested innocent people in the streets, whom they confined in the guard-house. The official reports show ten thousand cases of females imprisoned for drunkenness in Paris, during one year.

The duties on wine are collected in the following manner: The farmer, after the vintage, goes to the nearest city or town with samples of his wines, and as soon as he gets orders from a merchant or a private person for a quantity, he accordingly brings it for delivery, and at the barrier, or gate, the duty is paid either by the purchaser or the farmer himself. It is scarcely possible to evade payment of this duty, because every one who intends to remove wine must first procure a permit from the *Receveur principal* of his department, which permit accompanies the wine, is shown to the collector who receives the duty, and is then entered in his book, and he initials the permit to prove that it has been regularly entered. If the wine be for a private person, the permit is kept by him as a protection, to show that it has been legally obtained. Collectors, or receivers of this duty, are stationed at each entry of the town or city like toll-keepers in Great Britain; and they account to the chief collector for the receipts at the end of every week. The regulations for securing the duty on brandy are the same as those for wine, but the rate is higher, and any person may make brandy of the produce of his own vintage, not, however, without first specifying his intention to do so to the proper collector. There is a distinction between such persons as these and the professed distillers of brandy; the latter purchase the wine for that

* Cooper's Residence in France, vol. ii.

purpose, and pay a license for permission to distil, while the former pay nothing for their privilege; the licensed distiller, moreover, is subjected to the inspection of officers, who keep an account of his stock of wine, so that he can neither add to nor diminish it without detection and risk of forfeiture or a penalty, the whole business being conducted by permit. Frauds are sometimes detected, but from the lightness of the duty, there is little temptation to commit them, while a strict check is kept on all wine and brandy venders by the entries of the visiting officers.

The manufacture of beer has been long familiar in France, and is of such importance that so early as 1268, laws were drawn up and approved of by the Mayor of Paris to regulate the trade. The brewers at that time were called *cervoisiers* from *cervoise*, the term given to beer. In 1489, the laws were revised on account of the abuses that were practised in the breweries; and again in 1630, ten new regulations were added to the code, and registered in parliament in 1714. In 1801, there were seventy-eight master brewers in Paris; but it is proper to observe, that no one can open or carry on a warehouse in that capital without having regularly served five years of an apprenticeship, and three years as a foreman. The law wisely enforces that some of those corporations shall examine the ingredients used in brewing, lest any noxious or deleterious substance be employed; and it likewise enjoins that barm shall not be sold in any place without a previous inspection. No oxen or other animals are allowed to be fed, or kept within the range of the brewery in order to prevent their filth and annoyance. Formerly, each brewer could have only one pan, copper, or mash-kieve per day, containing fifteen septieres of malt. Three members of the corporation annually elected, are obliged to inspect the breweries, all of which they may visit whenever they please.

While on the subject of French breweries, it may not be irrelevant to describe the process commonly observed in preparing dry barm. When a sufficient quantity of brewers' barm is collected, it is put into thick bags or sacks, a number of which are placed together in a press and squeezed for some time. The first liquor which runs from them serves the workmen for drink; that which flows on a second pressure is used by tanners in the preparation of leather, which it is said to render more pliable. When the liquor is completely extracted from the bags, and there remains nothing but the spirit of malt and hops, the residuum is left to dry in the bags under the weight of the press, and only drawn out to be sold to bakers, or such as may require it. One pound of this barm will serve to leaven five hundred pounds of dough for the

lightest bread. In the event of a dull sale, the maker is obliged to keep this barm in a very dry place, and as free from air as possible. A similar process is observed in Flanders. Cobbett, in his Cottage Economy, speaks of a substitute for barm in America, which he calls *yeast-cakes*, and is thus described :—" The people of Long Island make a parcel of these cakes once a year, and when they bake they use them instead of *leaven*, and the bread produced from them is excellent. The materials for a batch of cakes are three ounces of good fresh hops, three and one-half pounds of rye-flour, seven pounds of Indian corn meal, and one gallon of water. Rub the hops so as to separate them. Put them into the water, which is to be boiling at the time. Let them boil half an hour; then strain the liquor through a fine sieve into an earthen vessel. While the liquor is hot, put in the rye-flour, stirring the liquor well and quickly, as the rye-flour goes into it. The day after when it is working, put in the Indian meal stirring it well as it goes in. Before the Indian meal be all in, the mess will be very stiff; and it will in fact be *dough*, very much of the consistence of the dough that bread is made of. Take this dough, knead it well, and roll it to the thickness of one-third of an inch, and cut it into cakes with a tumbler. Take a clean board, or tin plate, on which place the cakes and leave them to dry in the sun, and occasionally turning them, they will soon become as dry as ship-biscuit. After this they must be kept perfectly dry. When going to bake, take two of these cakes and put them into hot water, first breaking them into pieces, and leave them near the fire-place all night. In the morning they will be dissolved, and then use them in setting the sponge precisely as you would use the yeast of beer." In some parts of France and the continent, bread is made by letting the fermented dough turn sour, then mixing it with the flour intended to be baked, care being taken to put only a sufficient quantity to raise the bread without running the risk of acidity.

The mode of making beer in France does not differ much from that practised in England. Formerly it was customary to subject the barley to a partial germination, which was effected by steeping it for about four and twenty hours; after which it was spread on the floor, until it had arrived at that degree of growth that the sprout or shoot was nearly 4 or $\frac{5}{12}$ths of an inch in length. It was then dried on hair-clothes placed on a floor with interstices to admit the heat from an oven beneath. When sufficiently dried, it was ground so as to free the meal from the bran; it was then mashed in a vat, similar to those now in use, with a regular and false bottom. The heat of the water was ascertained by means of a thin wooden rod plunged into the

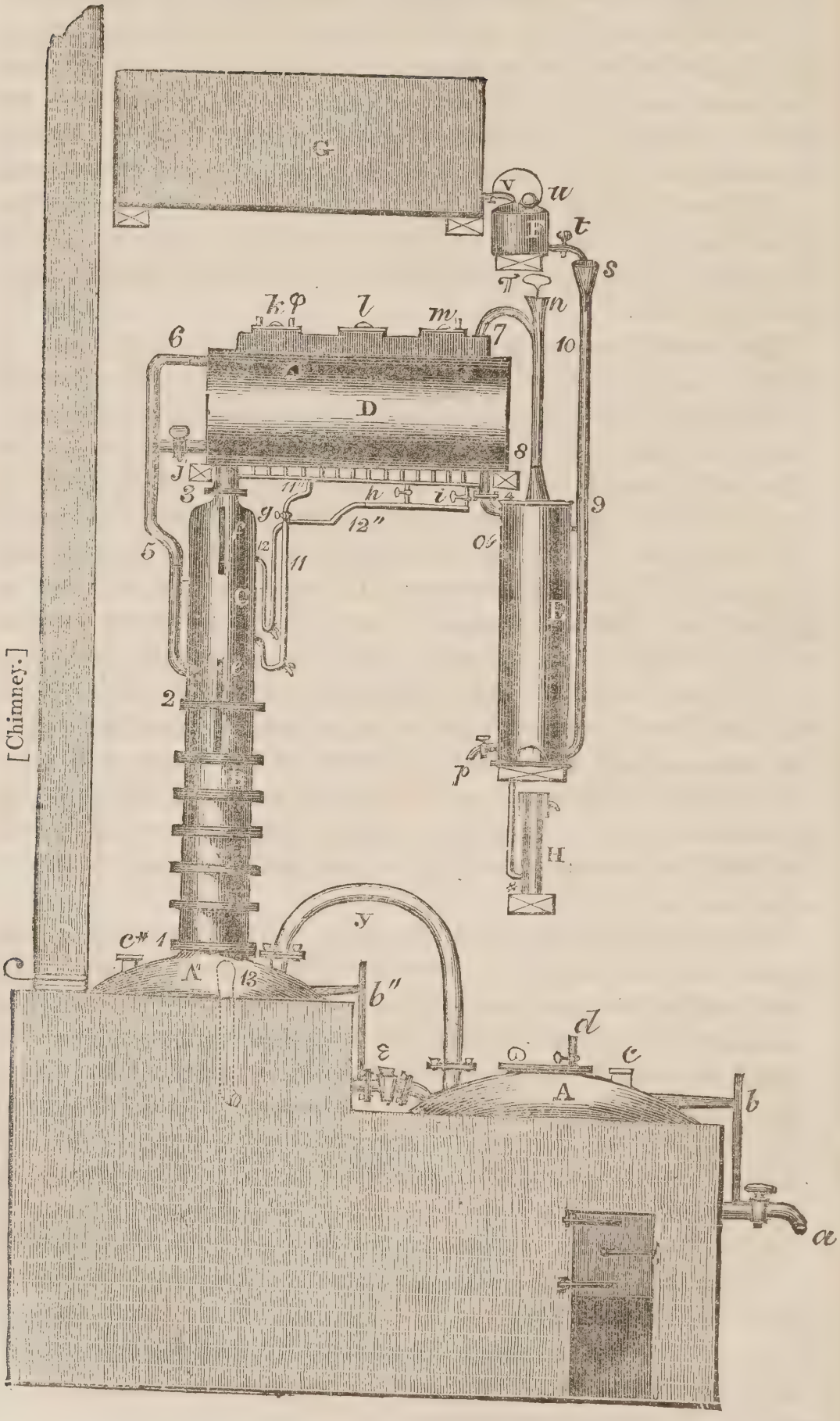
copper, when the ebullition on its side determined the temperature; but this practice has been discontinued since the adoption of the thermometer. After the grain was properly mashed, it was suffered to remain in the mash-tun for one hour; and the liquid was then permitted to run into a reservoir by the removal of a stopper in the centre of the kieve. New liquor was then poured into the mash-tun, and worked a second and a third time with the same malt, till it had discharged all its remaining substance. The quantity of liquor used in the copper and mash-tun at these different operations, was properly adjusted, and twelve bushels of malt were allowed to one hogshead of water. The material of the reservoir was removed to the copper where it was boiled with hops, in the proportion of eight and one-half pounds to each hogshead of liquor. In order to deepen the colour of the beer, it was boiled for the space of four and twenty hours; but if a pale colour were desired, it was merely allowed to begin to boil. To ferment this liquid when properly cooled, about a wine-gallon of yeast was allowed for every hogshead of the whole brewing, and it was usual to infuse a little coriander-seed to heighten the flavour of the beer. The French government, during the present year, (1837,) have, it is said, refused to license many of the gaming-houses in Paris, several of which have been converted into beer-houses.

The distillation of brandy and other strong waters in France, became an object of such consideration, that in 1639, the public authorities made it subject to the direction of the law. As the regulations under which the brandy trade is governed, are in some degree similar to those established for breweries, a detail of them would afford little interest. In various parts of France, distillation is carried on from both white and red grapes; the fermentation of the red is not generally so perfect as that of the white, the spirit from the red being less palatable. No reason, however, has been assigned for this difference, which may, perhaps, arise from a want of proper attention to the fermentation; several sorts of wine admitting of different degrees of attenuation. Experiments have shewn that the decomposition of the white exceeds that of the red grape from 20 to 25 per cent. In this country, as in many other parts of the continent, a great mistake has been committed in the improper selection of the grapes intended for distillation. It must appear evident that bad fruit cannot produce good drink, and it may, therefore, be inferred, that it is, in a great measure, owing to this want of discrimination that an inferior liquor is produced. The French are chargeable with not separating, at the commencement of the vintage, the wines intended for drink from those to be converted into brandies; hence it frequently happens that gene-

rous and good wines, which might be drunk without any modification, are sacrificed to the still, while, on the contrary, the thin small wines, both red and white, are set apart for the table, to the disadvantage of the grower, seller, and consumer. To make a superior brandy, the fruit, or wine, to be distilled, should be of the best description. Formerly, aromatic seeds and juices were made use of as necessary ingredients, but that practice has been long abandoned, since it was found that a pure spirit was more easily obtained from the simple fermented juice of the grape, than from any mixture to which recourse had been made.

The general method now observed in the manufacture of brandy differs in nothing from that practised in the distillation of malt-wash, or molasses in Great Britain, except that a little of the natural lee is thrown into the still along with the wine to improve the flavour. The stills generally employed are made of copper, set in brick-work, with proper flues and dampers, and differ in their conformation according to the taste or caprice of the owners. In some of them the bottoms are broad, in others, narrow. The most common and appropriate form is that of a frustrum of a cone, with a concave bottom, having the greater base upwards. From its construction, the bottom receives the force of the flame with greater precision than if it were flat; and from its convexity inside, the sediment falls on that part of the bottom resting on the brick-work, and by this means saves burning, and the consequent empyreumatical flavour which might be given to the spirit. The stills are worked slowly and cautiously, and the fluid kept at a regular temperature, so that the spirit may be drawn off as pure as possible.

The ingenuity of the French chemists and the unlimited means which they have had for the exercise of their talents, have enabled them to effect improvements in the construction of stills and of distilling machinery, which have considerably facilitated the progress of this branch of business; and a still has been lately employed by M. Charles Derosne, so contrived that it has the advantage of continuous distillation, without being attended with extraordinary expense in fuel, or any of the disadvantages of the ordinary stills. A description of this apparatus appeared of such importance, that I procured, through a friend at Paris, a copy of the original design as engraved by Bernard and Delarue. The conception of this still originated with M. Cellier Blumenthal, who, in 1819, assigned it to M. Derosne, by whom, in an improved state, it was exhibited in October, 1827, at Paris, before the Society for the promotion of French industry, when, from its superiority, he obtained the gold medal.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An apparatus of this description on the largest scale can distil from 10 to 12,000 litres of wine, (each 2,113 pints) in twenty-four hours, and produce from 1,500 to 1,600 litres of alcohol, or from 21 to 2,400 litres of brandy, 22 degrees over proof. One of the great benefits of this still is, that of requiring no water for condensation, the wine itself serving that purpose, and its bringing over, without interruption, a continued stream of spirit of sufficient strength for marketable purposes.

The body consists of a boiler, or still A, (sometimes two are employed as in the engraving,) surmounted by a large cylinder, B, which is divided into compartments by a number of copper shelves perforated with holes. Through these the vapour rises, and, in its ascent, comes in contact with the wine to be distilled, descending through the same perforations, so that both are retarded in their progress and blended together; the lighter material still continuing to rise through C, till at length it gains the condenser D, a copper cylinder in which a worm is placed horizontally. This condenser is filled with wine, which, while it serves the purpose of condensing the vapours in the worm, becomes itself heated; and, in that state, is conveyed to the still by the junction pipe 5 and 6. To collect the spirit thus condensed, each coil of the worm has, at the bottom, a tube for the purpose of drawing off the liquor, either in the refrigeratory E, by the upper long inclined tube, or by the lower one sent back again to the rectifier, or upper part of the cylinder, marked C, for re-distillation. At *b* rising from the discharge-cock *a*, is a glass tube to show the height of the liquor in the boilers, A A″, and in the first still forms a junction at the pipe *c*. The glass tube *e* shows the process in the rectifier, which is only an extension of the lower column B; while the tube *f* shows the progress in that part of the cylinder near the narrow pipe at 3, where the vapour passes into the first coil of the worm in the condenser D, which is divided into two chambers by a partition at *k*, but having a communication at the lower part near the coils. The still is charged from the receiver F, through a cock at *t*. This receiver is filled from the superior one G, by means of a ball-cock at *v*, the ball floating on the top at *u*, which opens or closes the cock, according as the liquor in it increases or diminishes; and thus regulates the quantity of wine required to be distilled in a given time. The liquor in the receiver F, is conveyed to the still, through the funnel and pipe at *s* and 9, communicating at the bottom with the refrigeratory, E, and, rising through that vessel, enters into the condenser, D, by the pipe 8 and 7, having a small tube at its apex, *n*, which is always open. The refrigeratory, E, contains a

worm into which the condensed vapour passes through the pipe at 4, having at bottom a cock *p*, for emptying the vessel; also a cock at *o* for the purpose of letting off water when the work is finishing. H is a hydrometer attached to the lower part of the refrigeratory E, with a thermometer to ascertain the temperature and strength of the spirits which run into the receiver. On the top of the first boiler, A, is a safety pipe, *d*. The figures 1, 2 are the junction between A, B, and C. The pipe 11 and 11″, with a cock at *g*, is for the purpose of returning to the rectifier, C, the weaker spirit from the near coils of the worm in D. The pipe 12, 12″, brings by means of the two cocks (*h* and *i*,) the liquor condensed in the posterior part of D into the superior part of C. The figure 13 shows a tube that communicates with B inside the boiler A″, but this is most frequently dispensed with. The cock J is used for emptying into B the liquid to be distilled and contained in D, when the operation is finished. The letters *k*, *l*, *m*, mark the openings into the upper part of D, and are kept shut and luted during the operation. In these openings, are small pipes, two at *k*, one of which is generally kept shut, and the other goes down a few inches into the liquid in D, and remains chiefly open to prevent accidents.

Before commencing work, A must be filled with wine until within two or three inches of the pipe *b*. A″ is also filled to the height of six inches above the discharge pipe *ε*. Before the fire is applied to the boiler, all the other parts of the apparatus must be filled with wine. The two receivers, G and F, must be also full, and when the condenser, D, and the refrigeratory, E, are full, the further admission of liquor is prevented until the wine in the coppers has parted with its spirit, and the fluid in the condenser is of such a heat, as to be admissible into the distilling column, B. When that part of the condenser, D, which rests upon C, is so warm that the hand cannot be kept upon it, the cock, *t*, at the receiver F is opened. At this stage, begins what is termed the *continual process*, since the supply of the vessels with wine, the evaporation, condensation, and cooling, go on independently, attention to the fire being all that is necessary.

The system practised by this apparatus is founded on the action of the vapour produced in A, as compared with the quantity of liquid which runs from F to D; and to regulate this and ascertain what was passing in the apparatus, the indicators, *e* and *f*, were contrived. A damper, as shown at *z*, has also been made to moderate or accelerate the action of the fire. When the distillation is rapid, and the vapour is quickly condensed, the liquid may rise in the column, and when perceptible at the middle of the indicator, at *e*, it may be con-

cluded that there is too much of the aqueous vapour furnished by A. The fire must then be decreased by pushing the damper into the chimney. When the liquor in *f* is seen coloured, it is then also necessary to slacken the action of the fire, lest there might be an admixture of the liquid passing through D, with the spirit as condensed in the worm during the progress to E; or the same end may be accomplished by a prompt regulation of the temperature of D.

When there is occasion to stop the working for four or five days, the most simple method of leaving the apparatus in such a state as to be readily resumed, is to extinguish the fire as soon as the wine has ceased to run from G; by which means, a charge will remain in the different compartments, sufficient for the re-commencement of operations.

This very ingenious invention has not been applied in Great Britain so far as I can learn, because it has been strongly urged as an objection, that the heavy and inspissated consistence of our malt-wash would not readily flow through the minute perforations in the shelves of the cylinders, while it would subject the machinery to interruptions and accidents, to which it would not be so liable in the distillation of wines. If this objection could be overcome by any modification or improvement the revenue might be readily secured, as there is no part of this apparatus which could be converted to an improper purpose; while, from the little expense attending the working of it, persons of limited capital might find it their interest to employ such a machine.

It is common among provincial distillers in France, to ascertain the strength of the spirits by putting a quantity of the brandy, as it runs from the still, into a clear glass bottle of four or five inches in length, swollen at the centre, which, when well shaken, enables them to determine by the size and stability of the head, the quality of the liquor and the state of the still: although this is an old and a common practice, yet all the improvements in the use of the hydrometer are fully known and practised by the French distillers.

The stills are worked by small faggots, chiefly of ash: the head of the still is taken off at each time of charging, and the furnace filled with wood. The dampers are then closed and not opened, unless the fire is too dull, or in order to give it air. This requires caution, for if the fire get strong, there is danger that the still may be burned or the head blown off; to prevent which, cold water is thrown on the head and worm, an expedient that not only contributes to cool the still, but to deprive the liquor of its pungency. Great quantities of brandy are distilled at Bourdeaux, Rochelle, Cogniac, and in the

department of Charente, the Isle of Rhè, Orleans, Bois, Poictiers, Angers, Tours, Nantes, Burgundy, Champagne, and Montpellier.

In the time of Ambrose Parè, who was physician to Charles IX. and Henry III., stills were made in the country of glass and tin; the former were considered the best, but some were made of potter's earth shaped in various ways, some cylindrical, viz. round and oblong, others twisted, &c.* He gives a receipt for the manufacture of pure *aqua vitæ*, which was obtained by a seven-fold rectification, and was considered a very valuable medicine in the cure of epilepsy, diseases proceeding from frigidity, wounds and punctures of the nerves, syncope, gangrene, and putrescence. It was used by itself, as well as to form a vehicle for other medicines. He also mentions a liquor similar to that distilled in China from the flesh of sheep, which, he says, was a restorative. This liquor was extracted from the flesh of calves, kids, chickens, fat-hens, partridges, and cock-pheasants, pounded small; to which were added some barley, the juice of fresh roses, with a little citron and cinnamon-water; the produce of these formed the liquor.

In the North of France, distillation is carried on from rye and barley malt, and at Dunkirk and other places, cattle are fed on the grains, wash, and refuse of the distilleries, as in Ireland and Scotland. These distilleries are not more than one-tenth the size of our own establishments; and the old mode of fermenting the wash on the grains is practised there, as is common with the Flemish and Dutch. In the operation only one still is used; but the required strength is obtained by repeated distillations. In Normandy, a spirit is made from sour apples, which partakes much of the flavour of the fruit; and another spirit is manufactured, termed *Eau d' vie de blè*. A great deal of brandy is made from cider generally, also from sirup and molasses, particularly where there are sugar-houses. A spirit resembling whiskey is also made from the fruit of the sloe-tree. Some of this is manufactured by the peasantry in the neighbourhood of Thionville, and is preferred by many to real brandy. The fruit when quite ripe is gathered, and with the kernel bruised to a pulp, in which state it undergoes fermentation for some days, and is afterwards distilled.

In some parts of the North of France, the root of the Jerusalem artichoke (*Helianthus tuberosus*), has been introduced for the purpose of distillation. The wash made from this vegetable is found to yield a very pure, strong spirit, which resembles that obtained from the grape more than any other substitute that has hitherto been tried. As the root grows readily in Great Britain and might be cultivated abundantly, it would be well to try the experiment here, as we have

* Parè's Works, folio, c. 3. p. 848.

no medium spirit between genuine French brandy and the fiery produce of grain, sold under the denominations of gin and whiskey. In Ireland, the cultivation of this plant would be attended with great advantage, since it thrives well in a boggy soil, and in a country like it, where there are so many unreclaimed and waste lands, its culture would be a profitable speculation, for, while the roots would afford a fine material for distillation, the tops would yield more fodder than the same space of ground if sown with ordinary grain.

From potato-berries, large quantities of brandy have been distilled in France for some years past. The process is very simple: the berries being gathered at full maturity, are then carefully bruised by means of cylinders, the pulp is put into vats, and left to ferment; when this is finished, it is distilled and brandy is obtained nineteen degrees in strength (nearly Dutch proof,) being at the rate of a hectolitre (one hundred quarts,) for every twenty or twenty-four hectolitres of uncrushed berries. This spirit is pretty-well flavoured. Some say that these berries produce, after fermentation, as much brandy as the grapes of Lorraine; these, however, yield little less than half their volume in wine, which, one year with another, affords about one-tenth of strong brandy.

From the potato itself, large quantities of spirit are drawn, and the French have been particularly successful in the management of this distillation and in procuring the greatest produce. But as the process is fully treated of in other parts of this work, it is unnecessary to dwell further on it here.

Distillation from beet-root is also carried on in different places in France, and the French people have arrived to a degree of perfection in this manufacture surpassing anything yet attempted in Great Britain. The long struggle between England and France, during the domination of Buonaparte, led to the cultivation of the beet and to the various uses to which it has been applied. Sugar was so largely extracted from it, that it served as a good substitute for foreign supplies; and it has been so extensively grown that it now affords a most valuable material for the manufacture of spirits. The sugar is generally in the proportion of seven or eight parts to one hundred parts of the root; and it is computed that a hectare of land, (nearly two and one-half acres,) yields two thousand four hundred kilogrammes, (47 cwts. 36 lbs), and such is its extent of culture, that some growers obtain from 7 to 8,000 cwts. annually. It has been calculated that the cultivation and other incidental expenses do not cost the farmer more than from five to eight shillings the hectare. When the sugar is prepared and the molasses is completely drained from the vats,

the pulp affords little less nourishment for cattle, than the root in its natural state; and the residuum of the distillery has latterly been converted into potash. A manufactory, exclusively for this purpose, has, it is stated, been erected in the vicinity of Valenciennes.

The works employed in the manufacture of beet-root sugar, throughout France, amount to upwards of four hundred, and the produce is stated to be thirty millions of kilogrammes. Such is the ardour with which the French are said to pursue the trade, that Ferney, once the residence of the celebrated Voltaire, has been turned into a manufactory of this article. Chestnuts have been latterly used for the extraction of sugar; and, in many instances, they are said to yield a proportion above that of the beet-root. But, without entering into further particulars, it may be generally observed that as France exceeds almost all other European countries of equal extent in the variety and richness of its vegetable treasures, it would be difficult to give a more comprehensive view of the matters on which a people so speculative and ingenious might exercise their industry. It may therefore suffice to say, that the spirits drawn from materials other than the grape, have been estimated at 95,000 hectolitres at a strength of 19° by Cartier's *areometre*.

A great quantity of the brandy and spirits manufactured in France is used in the making of *liqueurs* in which the French have always excelled. The introduction of these beverages took place, according to Beckman, in the year 1533, on the occasion of the marriage of Henry II. when Duke of Orleans, with Catherine De Medicis. The art of making them was derived from the Italians, to whom the invention is attributed; they were termed by them *liquori*, and vended through foreign countries under that appellation. Their pleasing palatable qualities ensured them a ready admission to the tables of the great, while their seemingly mild and medicinal properties offered a temptation to the weak and delicate, whose constitutional debility required a succession of artificial stimulants. Louis XIV. became so addicted to them in his old age, that he could scarcely endure existence without them. A list of these compounds, with the mode of making them, would occupy a small volume; and it is to be feared that advantage is too frequently taken of the innocency of the name, to cover an indulgence in stronger liquors.

In making brandy from the skins of the grape, it has been lately discovered that the presence of the stones communicates an empyreumatical taste to the liquor; and hence it has been recommended to separate them not only on that account, but as a profitable speculation, since an oil of a very superior description can be obtained from

the stones, that answers as a highly valuable lamp-oil, as well as being preferable to many other oils used for the purposes of the table. As a lamp-oil it yields a brilliant flame without either smoke or smell, and is of so good a nature that an ounce of it, subjected for an hour to a heat of 176° of Fahrenheit, loses only forty grains.

The value of the brandy annually exported amounted, at the commencement of the last century, to 5,852,900 livres ; in 1778, to 4,660,221 ; in 1784, to 11,350,200 ; in 1787, to 14,657,300. In the year 1789, there were exported to the Baltic, 17,800 hogsheads, and in 1790, 13,222.* Townsend, when he visited Montpellier in 1787, purchased the best wine for one half-penny per quart. The abundance at that time was so disproportioned to the demand, that the inhabitants distilled as much as freighted 32 vessels, containing 2,400,000 gallons, the principal part of which, he says, was smuggled into England.† Notwithstanding this vast manufacture, the importation of foreign spirits into France is sometimes very considerable. In 1787, the value of the corn spirits imported, amounted to 1,874,000 livres, and that of wine-brandy to 3,715,000.

The revenue arising to the state, according to Young, from the duties on wine and home-made spirits, amounted under the government of Louis XVI, to 56,250,181 livres, or £2,460,444 sterling. But it was not near so much during the late revolutionary wars ; it has, however, since the general peace of Europe increased to a degree highly beneficial to the French nation. In the beginning of the fourteenth century, so great was the export of this commodity, that the port of Bourdeaux alone, sent out in one year 1,350 vessels laden with wine to the amount of 13,429 tuns. In the time of M. Lavoisier, there were consumed in Paris 281,000 muids of wine, brandy, cider, and beer, amounting to 18,928,000 bottles. In 1822, France exported to England 1,179,687 gallons of brandy. The annual exports of wine in France, are computed to be 22,000,000 gallons, valued at £2,000,000 sterling ; but these form only $\frac{1}{8}\frac{1}{8}$ part of the whole produce of the vineyards of the country. The consumption in Paris alone, amounted, in 1834, to 596,585 hectolitres of wine ; 27,794 of brandy ; 12,352 of cider and perry ; and of beer to 78,948 hectolitres. The wine-shops in the city, in 1833, were 2,000 ; while through the entire country, the wine-sellers numbered 240,000, and the consumption averaged eighteen gallons for each individual. The total sums levied on the wines amounted, in 1835, to £12,833,333 sterling.

* Oddy on European Commerce.

† Townsend's Travels, vol. i. pp. 47, 48.

The market for wine in Paris is held in a large square called *Halle aux vins*, and covers a space of 325,000 square yards. It is divided into streets, with stores on each side, named after different kinds of wines, or districts where the best descriptions are produced. One of the large buildings is appropriated for brandy, and the others are set apart for wines; while suitable accommodations are provided for the merchants and the officers, who superintend the entrance and delivery of the wines. Here the dealers resort to select and make purchases of such liquors as they require. It was computed that these buildings would contain from 6 to 700,000 casks, each of which pays a duty of ten-pence, and sometimes fifteen hundred are entered in a day; the quantity being measured and certified by the officers. This market-place forms a sort of promenade and is attractive from its appearance, having rows of trees planted, and some of the buildings surrounded with terraces. This commodious and extensive structure is a further illustration of the genius and enterprise of Buonaparte. The wines sold out of this market to merchants and others, in one year, have amounted to 4,000,000 of hectolitres.

The rate of wine in Paris may be considered rather high, when compared with the country prices, but this is owing to the duty and the various expenses attending its conveyance to the capital. The *Vin de Mâcon* varies from eleven-pence to one shilling and two-pence the bottle. Indifferent Bourdeax sells at six-pence, while Champagne of the best quality brings from four to five shillings the bottle; and other wines are sold, according to their quality, in similar proportions. The environs of the city are filled with little ale-houses, termed *guinguettes*, where the middling clases resort on Sundays and holydays, to regale themselves with wine and other beverages, which can be obtained at a cheaper rate there, than in the city. The wine made in the immediate vicinity of Paris is very inferior, and is termed *Vin de Surenne*, from its indifferent character.

In concluding the subject of French distilled and fermented liquors, it is much to be regretted, that in a country where there is such a redundance of valuable wines, the restrictions of commerce should have rendered access to these commodities so difficult, and their general use so limited on account of the heavy duties imposed on them. In many parts of France, (particularly in the south-west,) as observed by Dr. Bowring, the wine-cellars are glutted, and people complain of the want of a ready sale, and ruin, in many cases, stares the unfortunate growers in the face; since they have been known in some instances to sell their wine at a half-penny a bottle, while in the region bordering on the Moselle, they have disposed of it at from three-half-

pence to two-pence a gallon. When wines can be procured at so cheap a rate, it might be for the general interest of the country were the duties reduced so low as to permit a free intercourse between the British and French nations. Many of our manufactures would naturally be received in exchange, and, as it would relieve the wine-growers of their superabundant produce, it would give an impetus to our home-trade, and prove of mutual advantage to both countries.

Habit has rendered our palates familiar with Portuguese and Spanish wines, particularly with the former, to which it may, in a great measure, be said we have been slaves, to the almost total exclusion of the superior wines of other nations. The Methuen treaty has been for some time abrogated; but although the duties on French wines have since become the same as on other imported wines, yet the duty is still too high. Were some further reduction made in this respect, it would ultimately tend to the increase of the national revenue, and prove beneficial in its consequences to the moral state of the people of this empire, by diminishing the use of many of those deleterious beverages, to which the great mass of the lower classes are so strongly addicted. A table of the exports will be found in the Addenda.

Few countries, from the nature of the soil and climate, should afford better wine than Italy; and although *rakia* is imported, an excellent brandy is manufactured in different states. The classical reader is so familiar with the virtues and excellence of the produce of its ancient vineyards, as to make a description and encomium almost unnecessary; its history, therefore, would afford little interest while it is so imperfectly known, that it cannot be clearly shewn to whom the country is indebted for its introduction. To Janus, stripped of his fabulous clothing, the Italians are said to have been indebted for a knowledge of agriculture and the use of wine, to the effects of which he fell a victim by a body of drunkards, who, while labouring under its influence, imagined they had been poisoned by him. The face of the country is so diversified with hill and dale, wood and water, as to render the prospect always delightful. The plantations, which are picturesque and numerous, are intermingled with fruit trees of every description, while the oak and the poplar serve as supporters to the vine, the branches of which, spreading in every direction, train the clusters of fruit, as they fall, into festoons, and cover them with a luxuriant canopy. The walls of the cottages are often found covered with vines, while the approaches to the doors are under an umbrage of fragrant fruits and flowers. In other situations the vines are supported by trellises of reeds or poles, presenting the appearance of innumerable ranges of espaliers extending as far as the eye can reach,

Every vine plantation contains a handsome cottage for the vine-dresser, and all has the appearance of active and animated industry.

In so diversified and luxuriant a land as Italy, the wines must be in proportion to the nature of the soil and the management of the vineyards. At one period, particularly in the time of Theodoric, wine was so cheap, that a gallon of it was sold for less than three-farthings, and a modern traveller says, that a goblet of the best sort can be purchased for the same money. For many years, however, the Italians have paid little attention to the cultivation of the vine, no ground, generally speaking, being exclusively appropriated to that purpose. The vines are commonly planted without distinction of species, on the edges of corn fields, trained upon trees, or found spontaneously clambering on hedge rows, and shooting up trees to the height of fourteen or fifteen feet, affording the peasant without toil, a sufficient supply of wine for his own consumption. The vine being but an object of minor consideration, no pains are taken in the tillage of the vineyards, in gathering the grapes, in selecting the good grapes from the bad, nor in cleanliness during the operations of treading, fermentation, or in casking and preserving the wine when manufactured.

The calcareous hills in the centre of Tuscany are said to produce the best wines in Italy, and they are distinguished by different appellations from the names of various kinds of grapes from which they are produced, as *Aleatico*, *Columbano*, *Tribbiano*, *Vernaccia*, *&c.* all red wines. Among the white wines formerly made in Tuscany, was the *Verdea*, a greenish coloured liquor, the favourite of Frederick II. of Prussia, and much celebrated by travellers. The white muscadel wines of Albano and Monte-Fiascone, and the red and white wines of Orvieto, are of an inferior description, though the produce of the Church territory.

In Naples, wines are abundant, both red and white: many of them rank high; the best kind, termed *Lacryma Christi*, is produced from the vineyards near Vesuvius. A notion prevails that this wine ought not to be drunk by any but those long accustomed to the climate. This, however, seems to be an erroneous opinion, for, if not taken to excess, there is no more danger to be apprehended from it than from any of the other wines of Europe, the proximity to Vesuvius having no influence whatever on its valuable properties. The city of Pompeii, so long buried under the eruptions of Vesuvius, is mantled with vineyards planted on the lava by which it was overwhelmed; and until 1748, the wine-growers were ignorant that they were trampling on the ruins of a once populous and magnificent city, within whose walls the Falernian, the Cœcuban, and the Rhætican once flowed to the inspi-

ration of some of the best bards that ever struck the lyre. The value of the wine and the extent to which it was consumed may be inferred from the number of public taverns discovered within the ruins of Herculaneum being no less than 900, while in Pompeii the counters and flaggons that were chained to the posts, indicated the estimation in which that beverage was held. It is remarkable, that in the villas discovered at Pompeii, the wine-cellars are placed, as Columella directs, at a distance from the bath and bake-house.

In Calabria, vines produce after being two years planted, and bear during sixty and sometimes one hundred years. The wines are various in quality, owing to the goodness of the fruit and the process in the making. The Palina and Nicostra are said to be good for eight years, while others, particularly the red wines of Monte Leone, do not keep above three years, and the white wines not much beyond six months. In the vicinity of Gierace is made the *vino Greco*, a rich, sweet, white wine, the produce of vines brought originally from Greece.* Around Reggio, vineyards are numerous and the wine is of good quality. Were proper encouragement given to the rearing of vines, Calabria might be made to yield a superior class of wines, but unfortunately the poor peasantry have little interest in this, or any other improvement of the soil, beyond what supports existence, as they have been greatly oppressed by the heavy exactions of their rulers.

No country should be supplied with a better wine than Italy, as there is scarcely any other intoxicating beverage used, and as the grapes form a great portion of the culture of the country; yet travellers complain that very little good wine is to be found in the whole peninsula. One great cause of the Italian wine being of so inferior a character, is, as already stated, owing to the negligent mode of its cultivation, and the want of cleanliness and attention to the process in the different stages of the manufacture. Grapes are often gathered before being ripe, and the good and bad promiscuously trodden in the same trough; hence the produce cannot be expected equal to that arising from fruit perfectly ripe, freed from stem, and of prime character. To the bad mode of fermentation may be added another cause, that of constantly putting fresh *must* into the vat until the whole ceases to ferment under an exhaustion of strength, and this is done from ignorance of the real nature of fermentation; besides, leaving the vats open and exposed to the influence of the atmosphere, which must greatly tend to injure the aroma and body of the liquor. In short, to the ignorance, obstinacy, and carelessness of the Italians, the inferiority of

Elmhirst's Calabria, 8vo.

their wines is wholly chargeable.—Even in the days of Pliny, nearly 2,000 years ago, the Italians were reproached with indifference in the cultivation of the vine, their avarice inducing them to sacrifice the quality to the quantity. It may be observed in general, that notwithstanding the complaint lodged against the Italian wines, excellent descriptions of native produce are occasionally to be met with in almost every town of Italy. The common wine at Florence and Rome has little flavour. The better kinds are the Monte Pulciano, the Orvieto, and the Aleatico, the first of which has not any peculiarity and is comparable to weak claret. The Tuscan wines neither bear carriage nor keep long, and are usually kept in chestnut casks: when sent to England, they are generally put up in thin glass flasks packed in chests, secured by a plaiting of straw ingeniously worked round them ; and, before the wine is corked, a little oil is poured in, perhaps to prevent the air from escaping. In some of the large palaces, wine is sold by retail, that the proprietor may thus turn into money the produce of his estate. For this purpose, a little window or wicket is opened in some convenient part of the wall, just large enough to admit the flask which the purchaser intends to be filled. The nobility of Great Britain would consider such a practice as highly derogatory to their rank and character. Near the town of Como, the birth-place of Pliny the younger, and lately celebrated as the residence of the consort of George the Fourth, vineyards are pretty numerous, particularly on the hills adjoining ; and at various places in the rocks, which become steep at the edge of the lake, there are wine-cellars in which the innkeepers and dealers of the place keep their wines: from these a supply is forwarded in boats to Como as occasion requires. No distillation from grain is carried on, although Indian corn is cultivated in Carniola, Styria, and Italy, to considerable extent; this grain was introduced at Verona upwards of 200 years ago. Here it is called *fermentone;* at Milan, *melgone ;* in Piedmont, *granone ;* in Tuscany, *granturco ;* in South America, *maize;* and by Linnæus, *zea mays.* It is remarkable that this grain does not thrive in a latitude farther north than that which is congenial to the growth of the vine, say, 50 degrees from the equator. It forms one of the chief articles of food in those countries ; with the stalks cattle are fed, and the *fogolia,* or chaff, is used for mattresses.

In a country so particularly gifted by nature, and abounding in flowers, plants, and trees of every sort, honey must be plentiful. The bees, however, are not left to their own instinctive operations, but are reared in cylindrical hives, hollowed from the trunks of trees commonly a foot in diameter and two feet in height. These hives are placed

on shelves at a considerable elevation on the outside of the houses,* so that the owner may watch the industry of the insects and avail himself of their labours.

The island of Sicily has been celebrated from the earliest ages for its extraordinary fertility; corn is said to have grown there spontaneously, hence the poets made it the residence of Ceres, the goddess of plenty. When the Greeks were at war with Xerxes, such were the resources of Sicily, that Gelon, who had made himself absolute at Syracuse, offered to furnish the whole Grecian army with a supply of corn during the entire period of the war, provided they would make him commander of their forces. In this island, the vine is said to have been cultivated earlier than in any other part of Europe, and this opinion seems to be borne out by the testimony of Homer, who, speaking of this fertile place, says,—

> "The soil untilled a ready harvest yields;
> With wheat and barley wave the golden fields:
> Spontaneous wines from weighty clusters pour,
> And Jove descends in each prolific shower."

Diodorus Siculus extolled the fertility of the Sicilian vineyards, and the excellence of their produce.

Agrigentum and Palermo, the most noted cities in Sicily, were famed amongst ancient records as the watchwords for luxury and dissipation; and the inhabitants were celebrated for their hospitality and the liberal distribution of their generous wines. Plato, speaking of the Agrigentines, says, they built as if they were always to live, and supped as if they were never to sup again. The modern wines of Sicily are said to be of an inferior character, the body of which is rendered too ardent by the quantities of brandy with which they are adulterated. The Sicilians do not take that care in the manufacture of their wines which the quality and abundance of their grapes demand; and they are equally inattentive to the distillation of their brandies, which are disliked from their harshness and pungency; and to this, perhaps, may be attributed the disrepute into which the Sicilian wines have fallen. What is called the Faro red wine is in great repute on account of its strength and resemblance to port, which it rivals in quality when kept three or four years. In addition to the quantity consumed in the island, about 10,000 pipes are annually exported.

Fifty different sorts of wine are still produced in the district of Syracuse, and the once celebrated Calabresian wine was the produce

* Cadell's Journey, vol. ii. p. 67.

of its vineyards. To this place, Polis, tyrant of Syracuse, and an Argive by birth, transplanted from Italy the grape which produced the Vinum Pollium, an article held in the highest estimation.

In the Lipari islands, some good wines are manufactured: from the largest island of this group, about two or three thousand barrels are annually exported. Two sorts of grape, (termed *Passole* and *Passolina*) are dried; the latter is more generally known as the Corinthian grape, and affords from ten to twelve thousand barrels of wine for sale. About two thousand barrels of Malmsey wine are made in the island, and which for its excellence is much esteemed.

Spirits of a good description are distilled in many of the islands of the Mediterranean. In Corsica, excellent wines are made: the white wine produced about Capo Corso is of two kinds, one resembles Xeres, so much, that large quantities are sent yearly to Germany, and sold there under that name; it is also sent to England and Leghorn, and sold as Spanish wine: there are many other fine wines produced in this island, one species of white resembling Frontignac, another kind at Furiani might pass for Syracusan, while there are some very like Tokay and Burgundy. Indeed, in few islands are to be found so many varieties of wines, or grapes producing more rich or generous liquor, and the brandy distilled there is of superior quality.

Of the wines of Sardinia little is said, but there is sufficient made to enable the inhabitants to export to the north of Europe, particularly to Russia and the Netherlands; brandy is also distilled in such quantities as to afford sufficient for exportation. In the small Island of Elba, two kinds of wines are manufactured, red and white, the grapes being of superior quality; the wines are rich, strong, and well-flavoured, the Vermont and Cleatico are highly esteemed. In making them, the grapes are trodden under foot, as the inhabitants have not hitherto used the press. Brandy of great purity and excellence is distilled, and, were its value with those of the wines of this island known in England, quantities might be imported much to the advantage of the British dealers.

Malta produces little or no wine, but a large portion of its revenue is derived from a low duty on spirits and wine imported, the former at $1\frac{1}{2}d.$ per gallon, the latter, when of an inferior quality, at the same rate, but the better kind of wine pays $2d.$ per bottle, and the tax raised on this article amounted annually to nearly £10,000.

Among the Ionian islands, that of Cephalonia is the most respectable, and its wines have been celebrated from the earliest periods, especially its red wines; and it is also noted for the goodness of its muscadine raisins and currants, from which an advantageous commerce

is conducted. The native grapes are as large as plums and the wine made from them is strong and pleasant. Abundance of well flavoured honey is produced there, but mead is not common.

The vine in this island is principally cultivated on stony ground; hence the wines are called "*Vino di Sasso*," or wines of stone, from the love of stony ground evinced by the plant. Muscadel makes a sweet wine like Constantia: this vine delights in a rich soil, but the Vino di Sasso is the best among the dry wines. Here there are a great variety of grapes, and the *Marsala* of Sicily is not to be compared to that of Cephalonia.* The whole produce of the Island amounts to from 30 to 35,000 casks, the half of which is red and is of a spirituous nature; the remainder consists of white wine of an agreeable taste, including 8,000 casks of muscadel, some of which is of inferior quality. From three to four thousand casks of brandy are distilled annually, which are sent to Trieste, Venice, Leghorn, England, and Russia. And from the aromatic herbs and flowers, liqueurs are prepared in two establishments erected for the purpose; honey to the amount of 80 or 90,000lbs. is collected from the bees of the Island.

The island next in importance is Corfu, the wines of which, for the most part, are also red; but though sweet, they are not considered equal in body to some produced in the neighbouring islands. The best description may be obtained for 4*d.* or 5*d.* a bottle, at the capital.

The wines of Zante are accounted excellent, and some of them approach to Tokay, they have the appearance of claret, but are rather sweet, and sell at from 6*d.* to 7*d.* the bottle: white wines are scarce in this island. Here are to be found the finest muscadine grapes, which are dried and exported to England and other parts of Europe. Walpole enumerates no less than forty different species of grape cultivated in this island, of which the *vitis corinthiaca* is the principal. The stem of the Eptakoilos, one of those species, is selected for a matrimonial crown at nuptial ceremonies, and care is taken to select a branch that has forty knots, which being a proof of the prolific qualities of the vines is so communicated to the bride.†

According to Hughes, there are as many sorts of wine as grapes; some sweet like the muscat, others luscious like the Cyprus, a few slightly acid like the Rhenish, but most are dry like the Sherry. These last named wines bear the same comparative superiority in point of strength over those of the other islands as they seem to have done in ancient times; yet many ages must elapse in the civilisation

* Napier's Ionian Islands, 8vo. p. 263. 1833.

† Memoirs Relating to European and Asiatic Turkey, 4to. p. 293, 4, 5, 6, 7.

of the people and the cultivation of their vines, before the produce can rival that of ancient Greece, which was held in such estimation as to be dealt out in single portions at the tables of the great, like imperial Tokay at our modern banquets.*

Zante is remarkable for its abundant produce of currants, the proper name of which is *Corinths*, from being originally cultivated about Corinth in Greece. From seven to eight thousand millions of pounds are the common annual produce. The price varies from 14*s*. to 18*s*. per cwt. The new currants always form part of the dessert at the tables of the respectable inhabitants.

From the *arbutus unedo*, the fruit of which is eaten and esteemed a delicacy, a spirit is drawn, as also a vinegar of a bright golden colour.

The annual produce of wine in Zante averages about 45,000 Venetian barrels; and of the honey of the island, of which there is a considerable quantity collected, the greater portion is sent to Venice.

The wine of Ithaca is esteemed the best in the Ionian islands; it is like port in appearance, of a sweet flavour, and, as has been remarked by a recent visiter, excellent enough to justify the taste of Penelope's suitors in draining large goblets of it to the health of their fair mistress. Here it may be noted that the modern Greeks, who are strongly attached to wine, do not follow the custom of putting a glass into the goblet for each guest; but use only a single goblet, out of which every individual drinks in turn. Captain Jones, in his travels through Sweden, relates that a similar practice is prevalent in that country.† Ithaca abounds in currants, 5,000 cwt. of which are annually exported. A small quantity of wine is also shipped from it, and reckoned amongst the best in the Ionian isles: the colour and flavour are intermediate between port and claret; and the liquor is not spoiled by impregnation with turpentine, as is commonly the case with the wines of the Grecian continent.

From the island of Santa Maura the annual exports are about 1,000 barrels, and the island of Zea raises about 7,000 barrels, and ships 3 or 4,000 barrels of wine of an excellen t flavour while on the island, but during the course of a voyage, it generally becomes sour and often putrid, an effect produced by the want of brandy to preserve it.‡

The island of Crete, now called Candia, is described with enthusiasm by travellers, for the mildness of its climate, the fragrance of the air, the fertility of the soil, and the picturesque beauty of its

* Vide Hughes' Travels.

† Travels in Norway, Sweden, &c. 2 vols. 8vo. vol. i. p. 70.

‡ Galt's Letters from the Levant, 8vo. p. 252.

scenery. This was once the centre of arts, commerce, and politeness it also contained above 100 populous cities: here, too, surrounded by vineyards, is the immortalized Mount Ida, and the extraordinary labyrinth of the famed Minotaur. Savary, when at the monastery of Mount Ida, visited the cellar in which Tournefort had reckoned 100 casks of wine, but he found only 40 barrels of a large description. It is customary for the superior, at the end of each vintage, to descend into this cellar and bless the new wines. The following is the form of the benediction used on the occasion :—" O Lord God, who lovedst men, look down on this wine, and on those who shall drink it. Bless our casks as thou didst bless the well of Jacob, the pool of Siloam, and the drink of thy Holy Apostles. O Lord, who didst condescend to be present at the wedding of Cana, where by changing water into wine thou manifestedst thy glory to thy disciples, send now thy holy Spirit on this wine, and bless it in thy name. *Amen.*"* A similar practice is observed in Russia, with regard to apples, before they are eaten. As soon as they are known to be ripe, the high priest solemnly blesses them in the most public manner, thus making it a regular religious ceremony.† This custom is, perhaps, borrowed from the Jewish practice alluded to in Exodus xxii. 29. Pliny informs us that the Romans never tasted of the new corn and wine till the priests had offered the first fruits to the gods; and Horace accounts those persons wicked who sent presents of the first fruits to the rich before the gods had been thus honoured. The wines of Candia are said to be generally of a fiery quality, to intoxicate quickly, and to be injurious to the nervous system.

In Cyprus, wine forms a considerable branch of trade, and is of a superior quality. It may be obtained for about three pence a bottle. The Greeks carry it to market in leathern bags, which give it an unpleasant flavour, a circumstance adverted to in other places.‡ Some of the Cyprian wines have a pitchy smell, owing to the vessels which contain them being half sunk in the ground, and pitched over to prevent the earth from attracting the wine. The old superior wines are deer, but the ordinary sorts are cheap and abundant. Limasol produces the finest muscadine wine of Cyprus, some of which has the consistence of oil, and may be kept to a great age. The *muscat* wine is a perfect liqueur, but it cannot be purchased for less than a dollar and a half the okka.§ The *Commendaria* wine, so called as being

* Savary's Letters on Greece, vol. i. p. 267.

† Johnson's Travels through part of the Russian Empire and Poland, 4to. p. 312.

‡ Bramson's Letters, vol. i. p. 312.

§ An okka or oke is 3lbs. 2oz.

the produce of a domain belonging to the knights of Malta, is held in the greatest estimation amongst the natives. The muscadine is a rich dessert wine; the Commendaria is a sweet wine improving in delicacy and flavour in proportion to its age. Perhaps there is no country on earth which yields such abundance of luscious fruit. The juice of the Cyprian grape resembles a concentrated essence. The wine of this island is famous all over the Levant, so that in the hyperbolical language of the Greeks, it is said to possess the power of restoring youth to age and animation to those who are at the point of death. Cyprian wine, however, is not much relished by Englishmen on account of its sweetness which renders it repugnant to their taste. Though a powerful aperient, it sometimes disorders the bowels even after being kept a number of years. When bottled for 10 or 12 years, it more resembles Tokay than any other wine, but the Cyprians prefer keeping it in casks, where, although exposed to the air, it will keep for any number of years. After having thus withstood the vicissitudes of the season for a single year, it is supposed to have passed the requisite proof and it then sells for three Turkish piasters the gooze or about 21 pints for five shillings, and afterwards the price augments in proportion to the length of time it has been kept. Commendaria of 40 years' standing in cask is considered a balm, and is preserved on account of its supposed restorative and healing quality for the sick and dying. The casks are never filled, and the bung is merely covered with a bit of sheet lead, which is almost daily removed to let customers taste it. Upon these occasions a hollow cane or reed is immersed in the liquor, and by suction a specimen is brought up and poured into a glass. Both the Commendaria and Muscad are white wines; when quite new they have a slight violet tinge which age soon removes; afterwards they retain the colour of Madeira. Cyprus produces red wines also; but they are little esteemed and used only as weak liquors for the table. It seems to be want of attention that prevents the red wine being rendered as famous as the white as it possesses all the requisites to make it excellent. The flowers of the *smilax aspara*, called in Cyprus *Zulobatos*, which are extremely fragrant, are immersed in wine to give it a grateful odour.* Cyprus and Candia, when under the government of the Venetians, supplied the greater part of Europe with wines: Candia alone is said to have exported upwards of two hundred thousand jars of malmsey annually. Lately, the yearly produce was equal to 40,000 jars, or 10,000 barrels, Italian measure. Each of these jars holds about five bottles of Florence measure. The Venetians carry off a great deal of it, and some is sent to France,

* Dr. Clarke's Travels in Greece, &c. vol. 4. p. 18, 19, 20.

England, Holland, and to different parts of Italy. It is a custom in Cyprus to bury large vessels of wine on the birth of a child, which are not raised until the solemnization of its marriage, which is perhaps upwards of twenty years after. During this period, the wine is said to acquire an exquisite flavour, and to become a real luxury to a delicate palate. The Cyprians, in making wine, carry the grapes from the terraces with shovels into *limos* or cellars paved with marble or covered with cement, and obliquely inclined. They are then squeezed as often as is necessary, in small presses called *patitiri*, the juice flowing into a cistern placed at the lowest part of the floor. It is afterwards conveyed into large earthen conical pitchers, half immersed in earth, where it is allowed to ferment for 40 days, and then closed with a clod of baked earth. From dried grapes an excellent spirituous liquor is made, partly for home comsumption, and partly for exportation to Syria.

After the conquest of Cyprus by the Turks, some of the wine found there was eighty years old; it was sent to the seraglio as a most valuable rarity, and it kindled in the fire and burned like oil. It is related of the Emperor Selim II., that he conquered Cyprus on account of its delicious wines, remarking on that occasion to Mustapha his generalissimo, "I purpose to conquer Cyprus, an island which contains a treasure that none but the King of kings ought to possess." In Cyprus, bees are reared and the honey collected in the following manner:—The people build a wall formed entirely of earthen cylinders each about three feet in length, placed one above the other horizontally, and closed at their extremeties with mortar. This wall is then covered with a shed, and upwards of 1,000 may thus be contained in a very small compass. The contrivance is simple, and was doubtless suggested by the more ancient custom still existing in the Crimea of harbouring bees in cylindrical hives made from the bark of trees. The hives of Egypt and Palestine are of the same form; those of Egypt are, according to Hasselquist, made of coal dust and clay, well mixed together. They are about a span in diameter, and from 6 to 12 feet long. They are dried in the sun and become very hard. Walpole, in his route from Smyrna to Halicarnassus, passed hives of this description made of earthenware, and from $2\frac{1}{2}$ to 8 feet in length.

Rhodes, the largest island of the Cyclades, is extremely fruitfnl, aud luxurious in grain, fruits, and flowers; but owing to the ignorance, despotism, superstition, and injudicious policy of the Turks, the interests of agriculture are entirely disregarded, and a great portion of the land is wholly uncultivated. Rhodes, so called from *rhodon*, a rose, with which this island very much abounds, was renowned for

the brazen Colossus, a statue of Apollo, placed over the harbour, holding a ship in the right hand, and in the left, a light-house for the direction of mariners. Some say it was 120 feet, others 70 cubits in height, so that ships passed in full sail between its legs into the harbour of the capital. After having stood 1360 years, it was thrown down by an earthquake, and it took nine hundred camels to carry away the fragments. The basis on which it rested was triangular, and its extremities were supported by sixty marble pillars. A winding stair-case led to its summit, from which, by the assistance of a great looking-glass hung about its neck, one could perceive Syria, and the vessels steering through the Levant and the Ægean seas to Greece, Egypt, Rome, and Carthage. The vine is little attended to by the inhabitants, though Rodwell observed bunches of Rhodian grapes three-fourths of an ell in length, and each grape as large as a plum. Dandini saw others of the same size at Mount Libanus, and Pliny mentions bunches of African grapes that were larger than an infant. Wine has latterly become an article of export.

The tyranny of the Turks over the inhabitants of the Greek islands, rendered the possession of property precarious, and induced many of the wealthy to appear as if they were really poor. An anecdote is related by a late traveller in Candia, illustrative of this fact, and which may not here be considered irrelavant. He was invited to a friend's house to dine, the approach to which was so wretched, that he anticipated nothing but the most humble fare. After passing through several winding and dirty alleys, he was ushered into what appeared to him a complete lumber-room, dark, smoky, and filthy, and even without a window to let in a single ray of light. The hostess, dressed like a cook, placed before the traveller and his companions some three-legged stools, on which wood, meat, and tobacco appeared to have been alternately chopped. The door being barred, in an instant, as if by magic, the walls were curtained with the most splendid Persian tapestry, and the apartment lighted up in the most brilliant manner. A service of the most beautiful porcelain adorned the table, as well as knives, forks, and spoons of silver, with elegantly gilt decanters of polished glass, filled with the richest Cyprian wines. The dinner was sumptuous, the confectionary rich and various, and the entertainment altogether such as would not disgrace a monarch. Copious libations of wine terminated the repast, and in a moment, the whole disappeared as if by the wand of a necromancer, leaving the room in the same dismal state as on the first entrance.

In all the islands of the Archipelago, wine is made in greater or less quantities; and from the abundant saccharine matter of the

grapes, it is customary to add one-fourth, or even one-third part of water in the process. Throughout all these islands, the method observed in manufacturing wines is nearly the same as that which Tournefort describes as practised in Scio :—"They plant their vines on the hills, and cut the grapes in August, and let them lie in the sun to dry for seven or eight days, after which, they press them and then leave them in tubs, the cellar being all the while closely shut. When they would make the best wine, they mix among the black grapes a sort of white one, which smells like a peach-kernel; but in preparing nectar, so called even to this day, they make use of another kind of grape, somewhat styptic, which renders it difficult to swallow. The vineyards most in esteem are those of Mesta, from whence the ancients had their nectar. Mesta is, as it were, the capital of that famous quarter, called by the ancients Ariousia.*

The wine of Scio was famous from time immemorial, and of which Julius Cæsar was particularly fond. It is delicate and highly flavoured, but will not bear a sea voyage. The figs of this island, are of an incredible size ; but mastich is the chief object of cultivation. There, flocks of tame partridges are said to be common : they feed in fields and vineyards by day, and at night are called home by a whistle, to which they invariably attend. From the fruit of the mulberry tree, the people of Scio distil a weak but agreeable brandy ; and from Homer's wine, another description of brandy is distilled, which ranks much higher in public estimation. This wine, according to Delle Valle, grows in a district excelling all the others in beauty, and furnishes the wine just spoken of, sometimes called Homer's nectar, from a tradition, that this was the birth-place, or burying ground of the great bard, and that this liquor was given to him when he was weaned from the breast. Some, however, affirm that Homer was interred in Nio, an island which produced a wine held in high estimation. Scio affords various wines, of which the red is the most relished, and which, it is asserted, was originally manufactured there : little is exported, the inhabitants making too good a use of it themselves. About three miles from the capital, on the sea-shore, is shown the spot where Homer is said to have kept his school, a most enchanting and beautiful situation, reflecting great credit on the taste of the poet. It is a rock, on which are still visible the remains of seats cut out, and a table with a noble group of trees close by, shading a fountain of limpid water constantly flowing from the rocks. Here also is a spring of water, famous for its medicinal

* Voyage in the Levant, vol. i. p. 283.

qualities, and in such estimation, as to be transmitted in large quantities to Constantinople, for the use of the Grand Seignior's seraglio. A magnificent harbour appears in front, cottages lurk amidst delicious gardens in the rere behind precipices of purple rocks, rising in their nakedness. Here the followers of the Prophet enjoy the coolness of the shade, smoking their pipes, and performing their ablutions where Mæonides was inspired. No stronger proof can be given of the celebrity of the wines of Scio, than the ancient coins of the island, which have in front a sphinx, with a bunch of grapes; for the reverse an amphora, with other symbols of the island's fertility.

Milo is fertile in fruit, and affords wine of a respectable character. Paros, another of the Cyclades, is not less celebrated for its wine, than for its marble. From this island were brought those remarkable stones, known by the title of the Arundelian Marbles, and which have been so interesting to antiquarians. The wine of Lemnos, or Stalimene, is cheap, rough, and badly made. The earth called *terra sigillata*, once much esteemed for its medicinal virtues, and of which were made the drinking-cups of the Grand Seignior, being a test of poison, was chiefly procured from this island. The antiquities of Naxos, or Naxia, relate almost exclusively, to the worship of Bacchus. Naxia, was formerly renowned for a kind of marble termed Ophites, which was speckled like the skin of a serpent, and of which drinking cups were made. It produces wine, oranges, and lemons: the lemon-juice and the distillation from the lemon-rind, are sent to Russia.

In Syros or Syra, among the ancient customs still existing, the ceremonies of the vintage are particularly conspicuous. Before sunrise, a number of young women are seen coming towards the town, covered with the branches and leaves of the vine, where they are met, or accompanied by their lovers singing, and joining in a circular dance. Tenos produces a sufficiency of wine for its own consumption, of which there is a small quantity of that denominated Malvasia. In Andros, a good deal of wine is made, but very little exported, being all consumed at home: the inhabitants are characterized as great drunkards.

Samos produces the rich muscadine wine, formerly esteemed under the name of Malmsey. Unlike every other wine, the sweet muscato is best in the first year, as its fine perfume passes off in the course of the second; and as it grows old it becomes strong and spirituous, like the Commendaria of Cyprus. Mead might be manufactured here, as honey is very plentiful. The Carob-tree is reared in Samos, and a great quantity of its fruit is sent into Russia, where it is dis-

tilled into a spirit, used by the common people. In Turkey, this fruit is used chiefly in feeding horses; among the Romans, the carob was the standard of a weight, as the barley-corn is with us a standard of measure. Mycone produces a red wine, of which about five thousand barrels are made annually; the quality resembles that of claret, but the inhabitants have a mode of making different kinds; and as the claret sort is the most expensive, they will rather cheat than give it genuine. When the grapes are fresh pulled, the claret flavour of the wine is best obtained by drying the grapes in the sun; the other sorts, and which stand the most watering, are produced differently: when the grapes are too much dried, the wine becomes rather sweet.

Most of the wine made on the island of Mytilene is sold to the Greeks, who convert it into brandy. From Tenedos, upwards of 800,000 okes of wine are annually exported. The Turkish government farmed the revenue on this article, which commonly amounted to 30,000 piasters, or at four shillings each, to £6,000. The wine of Tenedos is sent in large quantities to Constantinople, Smyrna, and Russia; and although not celebrated by the ancients, like the wines of Scio and Lesbos, yet it is considered superior to that of the surrounding islands. According to the writers of the Universal History, the muscato wine of Tenedos is the most delicious of all in the Levant; and it may be proved that this island has in all times produced great abundance of good wine, since on some of its ancient medals, is to be seen the branch of a vine, charged with grapes, a plain indication, that it was, at a remote period, famed for this article.* The brandy made from it is reckoned very good, and the little that is exported pays about four paras, or four-fifths of a penny per oke. The wine of Tenedos will keep from 14 to 16 years; after that it loses its red colour and becomes white, but retains its strength and flavor to a much longer period. Good wine of Tenedos not only excels every other wine of Greece, but, perhaps, cannot be equalled in Europe. The red wine is strong, and as dark and rough as port; a small quantity of muscadel is made and much esteemed. The red muscadel sells at eight paras, or four-pence the oke; the white at thirty. There is an export duty on wine of two paras the oke, and rakee, the common raw spirits, pays four paras the oke; a large tax is levied on the vineyards:—from the Greeks, eleven paras, or $5\frac{1}{2}$d.

* Hobhouse, in his account of his Journey through Albania, &c., with Lord Byron in 1809-10, alluded to these medals, and refers to a "Catalogue of Coins of the Grecian Commonwealth, chiefly out of Goltzius, in Walker on coins and medals, p. 43, London, 1692." Vid. Hobhouse, vol. ii. p. 674.

are taken for every thousand vines; from the Turks only five paras are taken. In 1829, the wine sold for 1½d. a quart.

The Russians draw a considerable supply of wines from Santorin, (the ancient Thera,) one of the most esteemed of which is *vino santo.* This is sold at the vintage for three or four paras the oke, or one penny per bottle, and is made from white grapes. The vine-growers expose the grapes to the sun for seven or eight days, spread on the terraces, or flat roofs of the houses; they are then pressed, or trodden in a vat, and the liquor is put into casks, and carefully bunged up till the fermentation ceases. It soon becomes a sweet and luscious wine, and is exported from the island to the amount of 1,000,000 of okes. Some brandy is made, but the quantity is inconsiderable.*

The island of Skopelos, which lies south of Salonica, produces grapes of good quality, and its wine has been long in repute, and is preferable to many continental wines of Greece. The inhabitants make a cake from the must of wine, boiled with a certain proportion of flour, which forms a paste of an agreeable flavour. This cake, in its composition, is said to resemble the *mustaceum*, or bride-cake of the Romans. Dr. Holland conjectures that this island is the ancient Peparethos, the excellence of its wines being alluded to by various writers, and particularly by Pliny, who maintains that the Physician Apollodorus recommended its use to Ptolemy, adding that it was not agreeable till it had been kept six years.

Of all the grapes cultivated in Turkey in Europe, there are none which excel that of Corinth; it has fewer stones, is more juicy than the common grape, and is in great request. It is said to have been brought to the Morea, from Naxia, about the year 1580, although no plant of that kind is at present in that island. This species of vine now abounds in Patras, along the coast of Achaia, as well as in the Ionian islands. A dry, light, and flinty soil seems the best adapted to its culture, while a thick, moist, and close earth seems uncongenial to its nature, whence it is alleged that a flinty soil, mixed with a sufficient quantity of clay, is best calculated to yield the best vineyards. French vines flourish best in a southern or eastern aspect, and prefer the hills to the plains, while the Corinthian vines, on the contrary, prefer the plains to the hills, and though they delight in being sheltered on the south, yet they regard a westerly situation, beyond every other, and the vicinity of the sea to mountains and wild prospects.

The process observed in the cultivation of the Corinthian vine

* Olivier's Travels through the Ottoman Empire, vol. 11. p. 259.

does not appear to differ much from that observed 2,000 years ago, as described in the writings of Columella. In laying out a vineyard, the slips are cut and planted in December, and procured from the finest vines of a neighbouring district; those taken from the adjoining vineyards never succeeding to any extent. In the greater part of Greece, the vines are permitted to creep unrestrained along the ground, and to make use of each other for support. The Corinthian vines bear from the seventh year, but their chief produce does not commence till the twelfth; they usually last from eighty to one hundred years. Like the tobacco, which withers beneath the gnawings of a worm peculiar to itself, the Corinthian vine has a vital enemy in a worm called *Scatari*. During the winter, it lives on the roots, and in the summer ascends the branches and consumes the young buds, with its double saw and strong forceps. Its life is short, as it comes forth and dies in the same year; like a true wine-bibber, it fattens and expires in its own gluttony: hence the adage so current in the Morea, "that gluttons die of dropsy as the *Scatari* does." The gathering of the grapes in the vintage is performed by women, with small knives bent at the point. These grapes are dried, pressed, preserved, and exported to different parts. A very fine species of brandy is made from them by the Jews, in different places of the Turkish empire.

In the Morea, the vine is cultivated, and wine forms a considerable portion of the exports of the country. The Malmsey, for which Greece was once celebrated, has long become extinct. A sweetish red wine is made at Horœa, which, according to Lake, has more body and a richer flavour, than any wine he met with in the Morea. Pliny, Theophrastus, and Ælian concur in reporting, that this wine had the property of making men mad and women fruitful.

Vineyards are numerous in the neighbourhood of Mantinœa, and the wine is made by treading the grapes with the feet, the liquor running into a cistern, from whence, after fermentation, it is carried by the customary usage in skins to Tripolizza. It is a small light-coloured wine, to which resin, and often lime, is added. During the vintage, the labourers have an allowance of bread and wine, with fifty paras a day, for their support and trouble. The wines are generally stored in vaults or cellars, most of which are of great magnitude. At Megaspilio, there is a fine convent, which is said to be one of the earliest monastic foundations in Greece. One of the barrels in its cellar contains one hundred and sixty loads of wine, each load being two goats' skins, which, calculating at 8 gallons the skin, amounts to 2,560 gallons. Notwithstanding the influence of Islamism, the Greeks indulge in the use of wine and brandy, which is in general consumption—even

the Turks themselves partake freely of these liquors. Spencer, one of the latest travellers through Turkey, says, that every day during his residence in Constantinople, he saw as many drunkards, as he had ever seen in any city of Christendom; while at marriages and funerals in the Morea, the social bowl is handed round as in other parts of Europe.

The medium annual average of grapes in the Morea may be estimated at 10,000,000lbs., and the sales may be reckoned at 8,000,000lbs., at about $1\frac{1}{2}$d. per pound. A description of the mode of drying and preserving the Corinthian grapes may not be uninteresting :—At one end of the vineyard is a floor in a sloping direction, to allow rain or moisture of any kind to run off. The bottom of the floor is of earth, so well beaten as to present a glittering surface, hard and smooth like marble. This is effected by a mixture of cow-dung, bullocks' blood, and straw tempered in water. This finely-polished surface prevents the earth from mixing with the grapes, and as it reflects the heat, dries the fruit the more speedily, which is spread on its surface bunch by bunch, care being taken to turn them every twenty-four hours. In a good season, ten or twelve days are the usual period of drying, but in a rainy season, twenty or thirty days are required. The stones are taken from the dried grapes by means of small rakes made of the stalks of the *Lixivium Africanum* of Linnæus, and, when properly cleansed, and separated from every thing extraneous, they are conveyed to magazines called serails, which are buildings of a peculiar construction. They are sealed hermetically, having only two entrances, one above and another below, in the former of which the grapes are thrown, until the magazine is completely filled. In a short time, they become so compressed by their own weight, as well as by other means, that a small viscous liquor is exuded, which unites them so closely, that it afterwards requires a shovel with an iron point to detach pieces from the mass, when they want to pack them in casks for exportation. It is only at the time of sale that the bottom door is opened. There is occasionally a pleasant wine extracted from the Corinthian grape, which is as strong and sharp as brandy; but the quantity it yields is so small, that few vine-holders will sacrifice their grapes, by submitting them to the press for so unprofitable a purpose.*

Mount Parnassus, in Livadia, is, whenever practicable, planted with vines, and the wines of this district are of excellent quality, particularly those made from the grapes on the southern side : of these the

* Beaujour's Commerce of Greece, Letter viii.

vineyards of Arracovia are the most remarkable. These are managed with as much skill as any of the plantations on the Rhine. The plants are all old stocks, from which one scion only is suffered to grow for the year, and which are afterwards pruned again. Walls are built to protect the ground from being washed down the steep declivities by torrents, which present the appearance of terraces; and the views from these are highly picturesque and sublime, owing to their great elevation. The Vale of Tempe produces wine resembling Claret, which is considered to possess a much better flavour than any in Greece. On entering Pergetos, Dr. Holland saw four or five stills at work by the side of the road; the materials of distillation being the raisins of the country, the spirit of which is used to a considerable extent in every part of the Morea.

In Albania, Macedonia, Epirus, and Thessaly, there are vineyards of considerable extent and prosperity, which the Grand Seignior encourages, on account of the advantages which they yield to the revenue. The vine is cultivated in the valleys below the town of Metzovo, in Albania, but their wine is thin, poor, and strongly impregnated with turpentine—an ingredient considered necessary for its preservation. In Greece and other parts of Turkey, wine is conveyed from one place to another in skins, made secure by a resinous preparation, which, from incorporating with the fluid, gives it a disagreeable flavour. Some allege that this resinous odour makes it a better stomachic, and tends to its preservation. From the *Pinus Maritima*, a resin is collected, used throughout Attica and other places, to preserve the wine from becoming acid, and is employed in the proportion of an oke and half to twenty okes of wine. From this it has been conjectured, that the pine-cone was rendered sacred to Bacchus. To the worship of Bacchus the drama is supposed to owe its origin, and the principal theatre in Athens was dedicated to him. In the days of Lysicrates, the theatre was, in some respects, more hallowed than the temple, and the exhibitions given there were in honour of the gods, particularly of Bacchus.

At Kirk Iklisie, an inspissated juice is made from bruised grapes, and which is a common marketable article in Constantinople. It is usually formed into rolls about a yard in length, containing walnut kernels. Persons fond of sweet-meats are very partial to this mixed preparation. The whole trade of Kirk Iklisie consists in the sale of this conserve, together with wine and corn. The wine is of a bright gold colour, tinged with violet, very pleasing to the eye, and like Champagne in flavour, but having a greater degree of strength. If

properly managed, it might rank among the choicest wines.*

The district of Bœotia furnishes very good wine, that of Orchomenus in particular, is considered equal to hock, having a flavour somewhat similar, but possessing less acidity, while it is as clear as spring-water.

The soil in the vicinity of Salonica is very favourable to the nurture of the vine, and from the exports of this port an idea may be formed of the agriculture of that and the surrounding country. The annual average quantity exported has been estimated at 1,000,000 kilos of wheat, 500,000 of barley, and 100,000 of Indian corn, the kilo weighing about 55lbs., and being from 5 to $6\frac{1}{2}$ piasters in value.

Honey is so very easily obtained in Greece and many other parts of European Turkey, that mead might be made an article of considerable importance in trade, and also a wholesome cooling beverage preferable to most of the adulterated wines. The honey to be met with at Athens is procured from Mount Hymettus; it is quite transparent and of a tough consistency, so that the dish containing it may be inverted without spilling, and the surface, if indented with a knife, will yield to the impression like a mass of dough. As an article of food, it is considered very heating, and sometimes causing fever. This effect has been attributed by Dr. Clarke to the peculiarity of the flowers on the mountain on which the bees feed. These are chiefly wild thyme, *thymus serpyllum*, *salvia pomifera*, and *salvia verbascum*. The ancients believed that bees were first bred in Mount Hymettus, and that all other bees were but colonies from this mountain; so that the primeval breed may still exist among the numerous wild stocks which inhabit the nollow trees and clefts of the rocks. To the flowers of the *Satureia Capitata* is owing the celebrity of the honey gathered on the mountains of Pendeli and Hymettus; indeed, most of the honey of Attica is drawn from the flowers of this plant. Galen speaks of it as the favourite food of bees. Attic honey is still in high estimation, and presents of it are sent to Constantinople. The honey of Lebadea, or Livadia, in Bœotia, is conveyed to the Grand Seignior's seraglio; but is much inferior to the Athenian honey, which is as clear as crystal, and so solid that it may be cut with a knife. In the Morea are many apiaries, the produce of which is of the finest quality, and equal to the honey of Hymettus, but much paler in colour. From Mani and Bardhunia are annually exported 10,000 okes of honey to Constantinople, Candia, and the other islands. To

* Vide Clark's Travels in Greece. Frankland's Tour to and from Constantinople in 1827-8, 2 vols. 8vo. vol. i. p. 70.

the south of St. Angelo, in the Morea, stands Cerigo, anciently Cythera, which is celebrated as the birth-place of Venus. In this island, honey is a staple commodity: in 1811, it contained no less that 1280 bee-hives, producing honey of prime quality. For a table of the exports and imports, see the Addenda.

In the northern provinces of Turkey, a good deal of spirits is manufactured. At Zara, the capital of Dalmatia, is distilled from the Marasca or Amarma cherry (so called from its bitter taste), that liquor or liqueur denominated Maraschino, so celebrated through Europe. This liquor is consumed to great extent along the coasts of the Adriatic. To the essential oil of the nut or stone of the Marasca or Amarasca, when ground and brought over in the still, this drink is said to owe its exquisite flavour.* There is also made among the islands on the coast of Dalmatia an excellent kind of brandy called *rakia*, which is drawn from the husks of the grape mixed with aromatics. About two thousand Venetian barrels of this spirit are manufactured, one year with another, at the town of Pago, in the island of that name. These the inhabitants principally export to Italy and Venice.

The white wines of the Moldavian mountains are considered delicious. The slopes of the hills are covered with vines, which produce wines in such abundance that large quantities are sent into Russia and Transylvania. The severity of the winter, instead of proving injurious to their wine, is turned to good account, as it is exposed in large butts to the open air. As soon as its watery particles become frozen, they are perforated with a hot iron, by which means the vinous part being highly concentrated is drawn off, and equals that of Hungary in strength and flavour. To this practice of freezing wine, Ovid, in his letter to Vestalis at Rome, makes allusion, and lamenting the situation he was in during his exile, bitterly complains, that not only the Euxine was frozen, but even the wine that he was to drink. Virgil also notices the freezing of wine, when describing the misery and hardship of a Scythian winter:—

> "The brazen cauldrons with a frost are flawed.
> The garment, stiff with ice, at heart is thawed:
> With axes first they cleave the wine, and thence
> By weight the solid portions they dispense."†

Wine is made in such quantities as to be exported. It forms also an object of public revenue, and an excellent brandy is distilled from it. Bees are reared in great numbers; the hives are formed in the trunks of trees, which are hollowed for that purpose. Those hives

* Vide the Abbe Fortis' Travels in Dalmatia, p. 291, also Cadell's Journey in Carniola, Italy, and France, p. 18.

† Georg. B. iii. v. 364.

intended to be preserved till the next year, are kept in cellars covered carefully with straw to protect them from the inclemency of the weather. Mead is manufactured, but to no great extent, as the honey is chiefly exported to Constantinople and the wax to Venice and Vienna. These matters form a very valuable article of trade, but, contrary to the practice in Great Britain, a duty is charged on the bees and not on the manufacture. This impost amounts on an average to £50,000 annually.

In the neighbourhood of Jassy and the adjoining country, there are vineyards producing an abundance of grapes, the wine of which, for the most part, is consumed in Poland. It is reported by a late traveller, that the wine of the environs of Patnar is, without exception, one of the most generous wines of Europe, and not surpassed even by the best Tokay. When kept in a good cellar for three years, it is as strong as brandy, and three glasses of it are said to make a man drunk. It is of a green colour, and becomes deeper in proportion to its age.

The quantity of wine made in Wallachia has been estimated at eleven millions of piasters annually; notwithstanding this, the merchants of this province are obliged to import from other countries to the amount of nearly six millions of piasters for home consumption, while they export to Russia a kind of wine called *Tokchany*. At Schumla, a principal article of commerce with the interior is wine, and at Rustchuk, a trade in wine is carried on with Vienna.

Since the introduction of the vine into Hungary by the Emperor Probus, in the third century, the culture of the grape has continued to be an object of great importance, not only there, but throughout the whole of the German empire. Previous to that time, Germany was without vines, and so meanly did the Romans think of the country, that they even doubted whether fruit could grow in such a soil and climate. That the vine was unknown while Hungary was under the dominion of the Huns, is certain, since in the verses of a Chinese princess who was married to a Tanjou or Hungarian chief, she laments that sour milk was her only drink, raw flesh her only food, and a tent her only palace. At the time of Attila's conquests in the fifth century, wine, it appears, was a common beverage, as it is spoken of with much familiarity on the occasion of the feasts given to that monarch as described by Gibbon.* But as to the exact period of its introduction, it is not perhaps a matter of such importance, as the success with which the plant has been cultivated, it having met with nearly equal encouragement to that which it has experienced in any other portion of Europe. The common mode of planting the vine is scarcely ever

* Decline and Fall, &c. vol. vi. chap. 34, pp. 77-78.

more than from four to five feet high. This method of planting is considered favourable to extensive produce, but not to goodness of quality. Were the sap, by a different treatment of growth, permitted to ascend through higher and more numerous ramifications of the branches, it would cause, it is conceived, a greater delicacy in the fruit and prevent that harsh, acid, and watery taste, which is attributed to many of the Rhenish wines where a similar culture is observed. To this practice also, it may be recollected, has been attributed the sourish and earthy taste of the Cape wines, as noticed when treating of that colony.

The produce of the wine districts of Hungary alone, has been estimated by Schwaitner at 18,000,000 eimers, which is more than one-half of the whole vintage of Austria and its provinces, calculated by Blumenbach at 32,873 eimers, or 2,522,955 pipes of 126 gallons each. The principal vineyards are those of Ofen, Pesth, Tokay, Grosswarden, Erlau, Werchetzs, Honthu, Œdenburgh, Rusth, &c. with the Syrmien wines and the red wine of Menes. Schwaitner computes the annual value of Hungarian wines to be 110,000,000 florins, or 289,300,000 francs. The wines made at the vineyards from Presburgh to beyond Posing, are considered excellent, and known by the name of St. George.

Great as the quantity of wine yielded by these vineyards may appear, it is said to be equal to no more than one-sixth part of what France affords. The consumption of wine in Hungary is very considerable, but it scarcely exceeds the export, as may be inferred from the commercial tables of Austria Proper in 1807, from which it appears that among the goods exported were—

Common Tokay wine, 2813 casks, worth 168,780 florins
Tokay Ausbruch, worth..... 10,800 .....
Other kinds of Ausbruch, 124 eimers, worth 3,720 .....
Common Hungarian wine, 39,077 eimers, 474,462 .....

So great is the encouragement given to the sale of the produce of the country, that the emperor, in 1804, forbade the use of foreign wine at his table. The most celebrated wine of the empire is Tokay, which has continued to maintain its character since the thirteenth century; and is among other wines as is the pine-apple among fruits.

This delicious wine takes its name from an inconsiderable town of Hungary, around which are vineyards extending over a country about twenty miles in diameter from Szanto to Tolesva. The vineyards in the vicinity of the mountains bear the name of *Hegallya* or *Submontine*, by which the wine itself is sometimes denominated. Those plantations are superintended with a care and assiduity unequalled in

any other part of Europe, displaying a regularity and neatness which give to each the appearance more of a flower-garden than of a vineyard. The plants are supported by upright props at measured distances, leaving ample space for an approach to each, while proper shelter is provided to guard the young plants during the winter. The vintage takes place late in October, by which time the fruit arrives at the greatest possible maturity: even some of the grapes are partly dried on the trees. Much depends on the season for the quality and quantity of the produce, should unhealthy dews or premature frosts set in, the vintage must be unproductive in proportion. In gathering the grapes, those thoroughly dried are separated from such as are nearly ripe, while all the damaged sorts are cast aside, thereby preventing any unpleasant taste or flavour to characterize the wine. Of the Hegallya there are four or five varieties, which are studiously kept separate; the ripe grapes are pressed by themselves from which the ordinary sort of wine consumed in the country is produced, being in general sweet and strong in body. The description of Tokay, which is chiefly made for foreign consumption, is made from a mixture of half-dried grapes with the common kind. This juice, which is very rich and luscious, forms the basis of those two celebrated wines termed *Tokay Ausbruch* and *Tokay Maslas*. The half-dried grapes are piled together, which, from their own weight, cause the flow of a thick sweet sirup, commonly called Tokay essence. After this, a slight pressure is made on the heap by which there is an increase of juice; care, however, being taken not to permit any particles of the fruit to be carried with it, lest they might injure the flavour. The juice thus obtained is mixed in a certain proportion with that of the common grape pressed in a hogshead with holes in the bottom, so that none of the gross matter is suffered to be incorporated with the liquor: this mixture, after undergoing fermentation, yields the prime *Ausbruch*. The *Maslas* is obtained by mixing juice prepared from the residue of the half-dried grapes with the common wine, both that which is procured by treading, and that which is had from the press. The Tokay wines are of different colours; those of a straw colour, having a greenish tinge, are accounted the best. Some are clear, others thick and turbid; the latter sort is often very excellent. Poland affords a ready market for Hungarian wines, where the best description of them is to be procured, from the length of time they are preserved. In the vicinity of Tokay, good old wines are to be had for a ducat or twelve francs the bottle, while in Poland, they are sold according to their age at from two to five ducats the bottle; and at Vienna, they rate at £12 sterling the dozen. At the late Duke

of Queensbury's sales, some years since, Tokay was knocked down at £150 per dozen, or about one guinea a glass. It is a prevailing notion that real Tokay is to be had from those vineyards only which are in the possession of the Emperor of Austria; but this is now considered an erroneous opinion arising from a compliment to the monarch; as it is well known that from the vineyards in possession of the nobles and other land-owners, wine equally excellent is produced. On the whole, it is generally acknowledged, that the wines of Tokay are superior to those of any other country in the world. Hungary abounds with luscious wines made after the manner of Tokay, both white and red. The wine manufactured at Menes, on the borders of Transylvania, vies with that of Tokay. It is of red colour, sweet and strong, having a most delicious flavour; but in this and in many other things, a name often conveys a meaning of superiority when not justly merited Having been thus minute in describing the manufacture of wine of such celebrity as that of Tokay, it may not be uninteresting to give the method of making the common wines in Hungary, as well as in other parts of the German empire.

When the season arrives for gathering the grape, all the wine-presses and the casks, both new and old, are carefully cleansed with boiling water, or sometimes with boiling wine, or a decoction of the vine-leaf. Every thing being prepared, the labourers, accompanying their work with songs, or cheered by the well-known music of the bagpipe, commence the vintage. The vine-gatherers stand in varied ranks; women and children, young and old, freeing the vines from their bonds, and collecting the grapes into the wooden troughs, or pales, which they carry with them; behind them follows *weinzedler*, watching that no grapes are left ungathered. The men collect from each the grapes that have been gathered, and carry them in tubs to the persons employed to prepare the must, who throw the grapes into a vessel for the purpose, and beat them with large sticks. This vessel has a double bottom, the upper one of which is pierced with holes, so that the juice which is pressed out escapes through it; and when the upper part is full, the grapes are emptied into the wine-press, or, if they are to be carried from the place, into a cask set in a frame. The gathering is generally divided into two parts, the white and the red; for the white wine, all white and rose-coloured grapes are taken, the mouldy and rotten are seldom rejected, but all bruised together, and placed without delay upon the press, and the expressed juice is immediately put into casks. In the Rhinegau, the vessels usually hold eight ohms, or 346 gallons; and they are made thus spacious, under the impression that the greater the body collected, the

better for the fermentation and quality of the wine. This made the wine-growers emulous of each other, in the size of their vessels: hence the cause of those enormous tuns built in different parts of Germany. The Tun of Heidelberg, which stands in a cellar, under the Elector's Castle, is 33 feet in altitude, 24 feet in diameter at the bottom, and contains 800 hogsheads, or 50,400 gallons.* On the top of the tun is a platform and balustrade, the ascent to which is by a stair-case of 50 steps. It is adorned with vines, grapes, glasses, large festoons, and other devices, in basso-relievo, with a number of apophthegms in the German language. This tun was broken to pieces by the French, in 1693, but rebuilt in 1729; it was usually filled with the wine, termed *vin du Neckar*, the produce of grapes which grow on both sides of the mountain. Mrs. Trollope, in her late visit to Heidelberg, seems to think that this tun is vastly inferior to Meux's great vat.† The tun at Königstein, made in 1725, though less celebrated, holds 3709 eimers, exceeding that of Heidelberg by 609 eimers, or 49 hogsheads. The approach to it is by a staircase of 32 steps, a smaller tun is suspended within the large one, which is 34 feet deep, and 24 feet wide. The top is railed round, and affords space for nearly twenty persons to regale themselves at a time. Cups are preserved for the use of visitants, and the Latin inscription, which graces the head of this enormous cask, welcomes the traveller to exhilarate himself freely, according to the dignity of the vessel, and drink to the prosperity of the whole universe. At Grüningen, near Halberstadt, is a tun 30 feet long, by 18 feet deep; and at Tübingen is a cask 24 feet long and 16 feet deep. When a vintage is great and the press small, the bruised grapes are often put into sacks and trodden under foot. The husks are brought from these sacks to the press, and what remains after pressure is put into vessels, where they are kept to be distilled into brandy. The red grapes are gathered precisely in the same way as the white, only having been bruised, they are put not immediately into the press, but into large vats, where they undergo a kind of fermentation.‡

Respecting Hungarian wines, Dr. Clarke justly observes, that "the opinions of different individuals are so opposite, that one traveller will probably condemn what another has extolled; perhaps, therefore, the best judgment may be afforded by comparison. The finest wine of Tokay is very like that of Cyprus; it has the same sweetness; and it is also characterised by that slight effervescence, from

* Chauchard's Germany, 4to. Chaptal on Wines.

† Belgium and Western Germany, vol. i. p. 325.

‡ Hungarian Miscell. Ap. Bright's Travels.

which the Commendaria of Cyprus is never exempt. To compare it with other preparations brewed by English housewives, it is something like *Mead*, or very luscious old *raisin wine;* and we therefore pronounce it *bad*. The wines of Buda we thought were better, because they have more of a resinous flavour. But nothing is more likely than that the very reasons we have now urged, in affirming the bad quality of genuine Tokay, may be considered by others as proofs of its excellence.*" On the whole, if the wines of Hungary are not found to be so palatable to our taste, it is, perhaps, owing to the custom of drinking the wines of Spain, Portugal, and France, not to any inferiority in the wines of this country. Having scarcely any beer, and the waters of Hungary being generally impregnated with minerals, wine is, therefore, made in great abundance, and for the reasons just given, the inhabitants have every inducement. It is a practice in the Bannat for every nobleman to keep on his grounds an inn to sell wine to the miners.† In Temesvar, the capital, red Tokay may be procured for two florins a pint, while the native wine is cheap and good.

In Hungary, though brandy is distilled from the grape, yet the distillation of a species of it from potatoes is carried on to considerable extent. An excellent brandy is likewise made from plums, fermented and treated nearly in the same manner as peaches in America. Were agriculture in Hungary on a level with that in other countries, the produce would be immense. Oats, barley, rye, sarrazan, or buck-wheat, grow most abundantly in Sclavonia, Transylvania, and Croatia, and wherever the height of the mountains, or the diversity of the forests, does not affect the temperature. In good years they export upwards of six millions of bushels of wheat into the neighbouring countries. Millet and rice are also cultivated, as well as maize; and in Transylvania, maize is the main article of sustenance, while rye is grown for the purposes of distillation. From elder-berries, when properly fermented, a pleasant and wholesome wine is made, and a pure and strong spirit is distilled from them.

Hungary, in fact, may be said to afford, in its various districts, all the beverages which promote the comforts and contribute to the luxury of the human race. Its grain, fruits, and vegetables, all yield their several proportions; and the vineyards are computed to produce from 18 to 20,000,000 eimers, (fifteen gallons each,) of various

* Clarke's Travels, vol. viii. p. 405.

† Travels through the Bannat, Let. xi. p. 97.

sorts of wine; while the brandy distilled from the grape and the plum, (the latter termed *Slivovitza*,) is of enormous extent.

In the beautiful valleys formed in many parts of the Croatian mountains, the vine flourishes exuberantly: the valley of Vinodol, adjacent to Ezirquenicza, takes its name from the number of vineyards with which it is crowned, and the wine made there resembles Champagne. The wines produced in the northern and eastern districts are said to be of great strength and excellent flavour; some are thought to rival the best Burgundy. It has been computed, that in the whole of Croatia, there are not less than 28,000 acres occupied as vineyards, yielding 160,000 seaux of wine. Plums being the most common fruit of the country, there is a very favourite spirit, termed *Schliwowitza*, distilled from it, which is in general use, as also a liquor made from pears and barberries, which latter is used instead of wine. Honey is obtained in considerable quantities, and is, together with the wax, chiefly exported. The wine manufactured there is not sufficient for the consumption of the inhabitants; the imports of this article are principally from Dalmatia, and annually average 800,000 florins. At Fiume, one of the principal cities, 1,600 eimers of liqueurs are manufactured yearly, which are mostly consumed in the Austrian dominions.

Although the Croats are generally poor, yet they go to great expense in their marriage and funeral ceremonies, the anniversary of a saint, or the baptism of a child. An entertainment on one of these occasions will last for several weeks, and will cost more than would support a family for half a year.

In the German districts bordering on the Rhine, the vine is cultivated to considerable extent, and the vines are of every variety. No ingenuity is wanting to promote its growth, as well on the barren rocks, as in the valleys. Opposite to the village of Remagen, on the road from Bonn to Coblentz, is a vineyard containing 200 acres, on a singularly picturesque, basaltic hill, called *Erpeler Ley*. This was once a barren rock, and it was planted by setting each plant in a separate basket, filled with earth and grass, and then placed in the cavities and interstices of the rock; and thus the place became, in a few years, beautifully clothed and ornamented with luxurious vines. The heavy impost on wines in this quarter has rendered the article rather unsaleable, and instead of proving advantageous to the government, it has pressed heavily on the agriculturists. This duty rates at one rix-thaler on every 160 bottles; hence the owner, being seldom able to pay the taxation before he can remove the wine from the cellar, is deprived of the benefit of a ready and profitable market; and

in consequence, the wines of one vintage are seldom removed, till they are intermingled with those of another. The Moselle wines are superior to the Rhenish, less injurious to the stomach, and more easily preserved, but, like many other impositions, the name of this valuable wine is often attached to a spurious or inferior article. The various windings of the Rhine (termed the father of wine,) present romantic, sublime scenery, which in many places is heightened by the abundance of vines that adorn the surface. Near the town of Oberwesel, on the right bank of the river stands the perpendicular rock of Rostein, which, by means of terraces, bears vines to the very summit, that afford a wine equally esteemed, and ranking with the best Rhenish. The cultivation of the vine, it is to be regretted, is not so profitable on the Rhine, as one might be led to expect. Its produce and sale are of rather a precarious nature, being a commodity of luxury, not of necessity ; and if not of a commanding quality, will scarcely obtain a price sufficient to pay rent and labour. This remark, however, is not to be understood as applicable to the whole of the wine districts, for where a moderate duty is charged, and the quality of the drink superior, there is always a ready consumption. In some places, the wines bring, even on the spot, from five to six florins the bottle.

The king of Prussia encourages the wine-growers on the Rhine, by giving a preference to their liquor, which makes it have a general consumption in that kingdom. One district, called the Rhinegau, may be said to be an extensive vineyard, being a succession of undulating hills, completely covered with rich verdure, and forming an amphitheatre truly enchanting, the vines of which obtain a celebrity in proportion to their aspect and position. The vineyards of the Duke of Nassau, called the *Steinberger Cabinet*, produce wine, now more estimable than that of Johannesberg, in the same neighbourhood. The hill of Johannesberg contains about 55 acres, and is the property of Prince Metternich ; it produces about 25 butts of wine, each containing 1,300 bottles, bringing at an average 28,000 florins. Of this wine, the Emperor of Austria gets a tithe for his own immediate use. This vineyard was in full bearing upwards of a century ago, and the vintage is generally a week or two later than in any other part of the Rhinegau ; the grapes are permitted to fall, from their extreme ripeness, and are gathered by means of wooden forks continued for the purpose. Prince Metternich has an old-fashioned castle on this hill, once the religious cloister of St. John, under which there are cellars of most capacious and singular construction, in which the wine is deposited.

The Bacchanalian paradise, denominated the Rhinegau, extends along

the right bank of the Rhine to Lorich, several leagues below Bingen, and, from time out of mind, has been renowned for its superior vines. This district was presented by an old Carlovingian king to an Archbishop of Mayence, and a remnant of the rampart and ditch, with which it was surrounded, is yet visible at Biberich. Writers have remarked, that the right bank of the Rhine is much more fruitful than the left, which is accounted for by the direction in which the river runs, exposing that bank to the southern sun, while the left is kept comparatively barren by the winds from the north, and scarcely any of the celebrated wines are made on the left side of that river. The Rhinegau is divided into superior and inferior cantons, relatively to the excellence of their wines—the former contain the villages on the heights—the latter, those on the banks of the river. The strongest wines are said to be made on the most elevated situations, the most wholesome on those of moderate height, while the wine of the low grounds is sour, and requires keeping. In travelling through this district, the eye is delighted with the undulating landscape, presenting vine-covered slopes, spotted by white country houses, villas, and steeples—villages and ruined convents resting in the valleys, which, contrasted with the black purple aspect of the rocks and with the delicate green of the vines, gives a mellow, luxuriant richness to the scenery. A bacchanalian might be supposed to drink intoxication from the prospect:—every thing having a blushing vinous colour.

The vineyards of Grafenberg yield as choice a vintage, and produce as good wines, as any on the banks of the Rhine, and superior to those of the Moselle. The Rhine wines constitute a distinct order of themselves. They are drier than the French white-wines, and characterized by a delicate flavour, and an aroma quite peculiar, and which should be reckoned *sourness* by the uninitiated. In the Austrian states, the wines are almost all of an inferior quality, being sharp and often entirely acid. The *Hock*, or Hochheimer, is a Mayn wine, and derives its name from the village Hochheim, which is situated above Mentz, on the banks of the Mayn. Riesbeck tells us, that the vineyards here belong to the chapter of Mentz, and that the Dean enjoyed the revenue of it. This wine, although it still has a good character, is considered inferior to the best wines of the Rhinegau, and, in Riesbeck's opinion, was the only wine in Germany which he found to be without any sour taste.* Hock wine is of such strength and body, that a tea-spoon full of it has been known to flavour a large tumbler of water. The vineyards which produce this

* Baron Riesbeck's Travels through Germany, vol. ii. p. 319.

wine, are on a little hill consisting of about eight acres, and so situated, that they seem to court the influence of the sun, and are protected by the town from the northen blasts. Every one contains about four thousand vine-plants, valued at a ducat each, and this little spot produces in a good year, upwards of twelve large casks of wine, bringing, as soon as made, nearly £150 a cask. This place has been rendered remarkable by Buonaparte making a present of it to General Kellerman.

Frankfort is the great mart for the sale of Rhenish wine, which consists of two sorts, red and white; the former the stronger of the two. The white wines are distinguished by their particular properties, or by the places where they grow. According to the former classification, those of Nierstein, Markobrunner, Steinberg, Rüdesheim, Bingen, and Bacharach, are the strongest, and have more body. Those of Schlossberg, (Johannisberger,) Steinberg, Geissenheim, Rothenberger, and Hochheim, are the most endowed with aroma and perfume, and of moderate strength. Lastly, those of Laubenheim, Asmannshausen, (red) Bischteim, are the most agreeable, possess a most delightful flavour, with a requisite degree of perfume, and are the most wholesome of all the Rhenish wines.

The wine Bacharach has been celebrated from the earliest period. The Romans called that place *Bacchi ara*, (the altar of Bacchus); and Pope Æneas Sylvius used to import a tun of it to Rome every year, and the Emperor Vinceslus was so fond of it that he sold the citizens of Nuremberg their freedom, for four casks annually. Near Worms, on the road towards Mayence, stands the gothic monastery of *Leibe Frau*, (the Dear Virgin,) noted for the excellence of its wine, denominated by way of eminence, *Liebfraun-Milch*, (the Virgin's Milk,) the produce of the Tokay grape being of a peculiar and delicate flavour, and almost as colourless as water.

The several sorts of wines in the Rhinegau and other districts along the Rhine, take their names from the respective places from which they are produced, being as follows:—

Hellenberg, Hinterhauser,*	near	Asmannhausen and Rüdesheim.
Rodlanberg, Kapellgarten, Rothenberger,	near	Geissenheim.
Schlossberg,	at	Johannisberg.
Markobrunner,	at	Hattenheim.
Steinberg,	at	Everback.
Graefenberg,	at	Kiedhich.

* *Hinterhauser*, or *Stinterhauser*, signifies *behind the houses*, so called from the vines standing on lower land from the hill, behind the village.

Hauptberg, at Rauenthal.
North of Mayence, on the left bank of the Rhine,
Scharlachberger, (red) near Bingen.
Rhein-Dieboch, (red.)
Muscateller, }
Kuhlberger, } near Bacharach.
Engehölle, (red) near Oberweasel.
South of Mayence.
Dienheim, South of Mayence.
Niersteiner and Oppenheim.
Laubenham.
Liebfraumilch.
West of the Rhinegau, on the right bank of the Rhine.
Guttenfels, near Caub.
Rosteiner.
East of the Rhinegau.
Hochheim.
Wiekesh.
Costheim.

Most of the vineyards enumerated are of small dimensions, and the quantity of wine they afford is trifling in proportion to the immense quantity sold under the denomination of Rhenish wine. To procure a genuine article, it is necessary to have recourse to the proprietor of a vineyard, or to some respectable merchant, from whom alone may be expected wine of the best quality. Dr. Granville, who was in that country in 1827, gives the following rates at which wines were disposed of, which will convey an idea of the imposition practised in the wine trade :—

Rüdesheim wine of 1825, was sold at Frankfort in 1827, for 1,100 rix-dollars the ohm, or 15 dozen bottles, at 17 shillings the bottle. The Schlossenberger, (Johannisberg,) for 700 rix-dollars; the Steinberger, for 900 rix-dollars; while in 1822, the same three kinds of wine brought respectively 1400, 750, and 980 rix-dollars. The same growth in 1818 produced:

Johannisberg, 3,000 rix-dollars, for 15 dozen.

Rüdesheim, Bergwein, 910 rix-dollars.

The Tavern wines of Germany are, according to Cooper, of a superior quality to those of the same class in France.

Wine of a great age is frequently offered for sale. Markobrunner, said to be of the vintage of 1719, and Johannisberg of that of 1726, were disposed of; the former at £590 sterling for 15 dozen, or 48 guineas for one dozen, while the latter was sold at £664 the 15 dozen, or 55 guineas for one dozen.* The passion for old wines has

* Granville's Journey to St. Petersburgh, 2 vols. 8vo. vol. i. p. 189, et passim.

sometimes been carried to great excess. At Bremen, there is a wine-cellar, in which five hogsheads of Rhenish wine have been kept since 1625, which cost £50; and it has been calulated, that had this sum been put out at compound interest, a bottle of this wine would be worth £908,311, and a single wine glass of it would cost £113,492.

In the days of Riesbeck, Austria exported to the adjacent German States upwards of two millions of guilders' worth of wine, equal to £175,000.

Along the banks of the Rhine, vineyards are to be found every where, and the vines growing on places the most inaccessible, even among fragments of slate rock. The towns and villages are surrounded with vineyards. On every spot of ground, against every wall, against every house—every garden in a little arcade is formed by vines—every stick, every piece of wood, is a prop for a vine, or contributes to form a trellis.—"Lend me your walking-stick to support my vine," is, according to a recent traveller, a familiar expression:—"The vine will support you when the stick cannot: lend me your umbrella to prop my vine; the vine will some day shelter you from wet, much better than frail silk."* Such are the sayings which the value and estimation of the vine have occasioned.

Among the Germans, the vine is of such high agricultural interest, and wine of such commercial importance, that the establishments connected with them are, in many cases, on a most extensive scale. The immense wine-vaults in Bremen, particularly those called the Rosenkeller, are a specimen. These subterraneous stores are so capacious as to be able to contain 2,000 hogsheads, besides enormous vessels for holding wine, one of which alone is said to hold 120 hogsheads; and that the wine it contains has remained in it upwards of two centuries. Twelve of those casks occupy one apartment, and by way of distinction have been denominated the *Twelve Apostles:* one of them is termed Judas, being said to contain the best wine, as if from its age and strength it is better qualified to betray. These vaults are finely arched in the Gothic style, and are remarkable for an echo little inferior to the whispering gallery in St. Paul's, as a person speaking softly at one end may be distinctly heard at the most remote extremities by placing the ear against the wall. In travelling along the banks of the Moldau not far from Prague, from time to time the doors of spacious wine-caves meet the stranger's eye in places quite remote from human dwellings. Speaking of the monastery at Erbach, Dr. Render says, the wine-cellars excited the utmost astonishment, being so capacious that a coach and four might easily drive round and

* Two Hundred and Nine Days on the Continent, vol. i. p. 107.

turn in it with the greatest facility, and the number of large casks it contained was really amazing, each being seventeen or eighteen feet in height. The monks were hospitable to an extreme, each of them had four bottles of the best wine for his daily allowance, and when they entertain strangers they were allowed an *ad libitum*.

At the *Green Man Inn*, St. Goar, are preserved two large silver goblets of great antiquity and curious workmanship, the sides of which are embossed with various figures and inscriptions. One of them was presented to the city of St. Goar by Christiana, Queen of Sweden, and the other by one of the Princes of Hesse. Before drinking out of one of these cups, strangers have to undergo a singular ceremony: the visiter is seated in a chair, in the middle of a large room, having a heavy silver collar put round his neck, a gilded crown on his head; and he is then asked whether he will choose to be baptized with wine or with water; if he say water, a large quantity is poured on his head; but if he prefer wine, which is generally the case, he is obliged to drink a certain number of toasts out of the two silver goblets. The newly baptized stranger then writes his name in a record-book kept for the purpose, after which the wine is passed about freely amidst singing and jocularity. The cellar used on this occasion, which is called *coronation*, is said to have belonged to the two sons of Charlemagne, and much conviviality and cheerful enjoyment are the common attendants.*

The time of the vintage in Germany is always a period of great rejoicing, and that festival is annually celebrated with great eclat and hilarity. On such occasions, beneath an umbrageous bower, a table is ornamented with flowers, and a kind of throne is erected in the centre, on which is laid the first bunch of ripe grapes in imitation of an altar to Bacchus. After the master of the ceremony has made a speech suitable to the occasion, the persons assembled, young and old, dance round the altar, and regale themselves with the comforts of the season.

Plutarch mentions a feast of this kind celebrated by the Greeks and Romans in the time of the vintage, at which their tables were loaded with all kinds of fruits, placed under tents made of vine-branches and ivy, intermingled with aromatics; and from the strong similarity between this and the Jewish feast of the Tabernacle, described in Leviticus, chapter xxiii., Plutarch considered that people worshippers of Bacchus.

Whether owing to climate, to custom, or to whatever cause, it has been observed that the inhabitants of wine countries are in general

* Tour in Germany.

more cheerful, tranquil, and regular in their dispositions, than those who are drinkers of beer, ale, and spirits; and those characteristics are not less remarkable at the time of vintage than in any other season of the year. This is exemplified by the inhabitants of the Rhinegau, who are a strong, handsome, healthy, and cheerful class of men, capable of bearing a great deal of labour; and hence the inhabitants of the south are said to be stouter than those of the north; for the blood of the wine-drinker is considered purer than that of the beer-drinker; and as life is said to be in the blood, the remark on this assumption may be justifiable. On the contrary, it may be urged that men who never tasted any description of fermented liquor, and who are accustomed to the lowest diet, are found capable of undergoing fatigue equal to that of any other race of people;—a circumstance known to every observer. It is a practice amongst the peasants in the north of Italy, never to go out in the morning without eating bread and drinking some wine; and they look remarkably stout and healthy. Grapes are said to be particularly wholesome when eaten with the morning dew on them; hence they are regularly served up at breakfast, not only as a zest but as a luxury. At Vevay, in Switerzland, the physicians of Geneva order patients to subsist during the vintage, altogether on grape diet, the period of which is usually three weeks. The common daily allowance is about 7lbs. of grapes, without tasting any other sort of sustenance, not even drink of any description. In cases of insanity, the same regimen is said to be very efficacious in restoring the patient to a sound state of mind,* which is a further proof of the renovating power of the grape worthy of investigation and inquiry, and to which it might not be beneath the faculty in this country to direct their attention.

Were the properties of the grape sufficiently known, the vine would become an object of cultivation in every part of Europe, where the climate would permit its growth. The vine does not shew a preference for any particular soil, but a dry is much better than a moist situation. Limits, however, for its cultivation seem to have been prescribed by nature, which no ingenuity of man can surmount. In some of the northern provinces of France, as Brittany and Normandy, the vine is not cultivated at present, though it was formerly reared there to considerable extent; it has given place to the apple and the crab, cider being the chief beverage. The regions of culture for this plant do not lie parallel to the equator, but in an oblique direction from north-east to south-west, from about 35° to 52° north latitude. In the inland parts of France and Germany, the utmost limits of it are

* Bakewell's Travels in Switzerland and Auvergne, vol. ii. p. 20.

about 49° or 50°, but the further north, the produce is the more inferior. In some places as the Crimea and the southern parts of Russia it does not exceed 47° or 48° of latitude. In Asia, the vine does not flourish in a higher latitude, since none are to be found to grow more northerly than Astracan and the foot of Mount Caucasus. In the New World, the southern states are the most congenial to the vine, and the northern seem unfriendly to its culture. It is true, that the vine is found considerably to the north of this continent, but it is stunted and impoverished in growth in proportion to its distance from a certain latitude, generally that of 37°.

The vine appears to occupy two belts on the earth's surface, both of which lie in the warmer regions of the temperate zones, seldom exceeding 51° in the northern, and rarely approaching to 40° in the southern hemisphere, and is chiefly confined to an elevation of 2,460 feet above the level of the sea. In Switzerland, this elevation is limited to 1,760 feet; in Hungary, to 900 feet; on the Alps, to 2,000 feet; in Teneriffe, to 2,500; but in the Appenines and Sicily, the extent is 3,000 feet, while it does not grow at all in the high lands of tropical America; yet, according to Jacquemont, in his Journey in India, the vine prospers at the height of 10,000 feet above the level of the sea,* but much of this diversity depends on ordinary circumstances. It seems, however, that the produce of the vine attains a maximum in the south of Europe and the western parts of Asia. This, perhaps, may be owing not so much to climate as to the superior state of cultivation bestowed upon it. The higher the latitude, the more inclined to acidity is the grape; hence the difference between the Rhenish, Sicilian, and Grecian wines. The strength is also influenced by the proximity to the equator, for which reason Madeira wine is stronger than that of northern latitudes.

Considering these relations to be correct, it is evident that it is not altogether on temperature or climate but to other causes must be attributed the success in the cultivation of the vine, as regards both quality and quantity. If the growth of the vine depended on temperature, then the vicinity of London would afford better vineyards than that of Zurich or Geneva, and the summer heat of Moscow is higher than that of Paris; yet grapes in the former ripen only under glasses. In Madeira and the Canary islands, the main temperature is not much lower than in Algiers and Cairo; yet the culture of the vine is very considerable in those islands, whereas in Algiers the temperature is already too high, and in Cairo, the vine is planted only for the sake of its shade. To determine the primitive seat of the vine is still

* Jacquemont's Letters from India, vol. i. p. 272.

more difficult than that of its artificial distribution: in the Caucasus and the islands of the Levant, it frequently occurs wild, and everything concurs to point out these and the western portions of Asia as its original home.*

Besides the use that is made of the grape in different countries to promote the comfort of man, in Germany, as well as in France, the refuse of the vintage is even converted into an excellent food for cattle, on which they fatten with the same facility, as those animals do which are fed on the refuse of the corn-distilleries in Great Britain. The mass of the grapes, as it comes from the press, is broken with the hands in order to divide the lumps, and is then thrown into casks where it is moistened with water, and covered with earth, with mixed straw to the depth of seven or eight inches. When the weather is such that the cattle cannot go into the fields, about six or seven pounds of this refuse soaked in warm water with bran, straw, turnips, potatoes, and oak or vine leaves, preserved purposely in water, is given to them in a tub, evening and morning. Horses and cows are said to be fond of this food, but it is given to the latter in moderation, as it has a tendency to make their milk turn sour;† it is a singular coincidence that the milk given by cattle fed at the corn-distilleries is of a thinner consistence, and more liable to turn sour, than that of cows fed on hay or pasture.

When Dr. Bright visited Pesth in 1814, the prices of wine and spirits were as follows:—

1 eimer, (nearly equal to 10 gals. Eng.) of old Ofen wine from	30 to 40	florins.
Ditto, last year's Ofen wine	15 to 20	.....
Ditto, old white Ofen wine	32 to 45	.....
Ditto, last year's old White Ofen	18 to 32	.....
Ditto, of spirits distilled from plums	35 to 90	.....
Ditto, from grain	52 to 55	.....

These prices being considered dear at the time, the Doctor, in order to afford some standard of comparison, has also stated the prices that prevailed during the fair held at Pesth in the latter end of the year 1813, viz:

I eimer old red Ofen wine	14 to 20	florins.
Ditto, the same year	8 to 12	.....
Ditto, common wine of the country	6 to 8	.....
Ditto, of spirits distilled from plums	25 to 30	.....
Ditto, from grain	22 to 25	.....

* Edinburgh Philosophical Journal, No. xxii. October, 1824.

† Chaptal on the Cultivation of the Vine.

The same writer considered five-pence a high price for a bottle of wine. In Riesbeck's time, it could be purchased at from two to four cruitzers the bottle. Although the peasants in Hungary are permitted to purchase vineyards, they are obliged to pay one-third of the produce to the lord of the soil, a heavy tax when the chance of bad vintages, which too often happen, and the occurrence of other casualties are considered.

The quantity of wine produced annually in Carinthia is estimated at 100,000 eimers: the quality is not considered superior, yet it meets, notwithstanding, with a ready sale. In this duchy, they brew two sorts of beer; both of which are in estimation as good and wholesome beverages. Apples being abundant, large supplies of cider are produced, equal in body and flavour to that of Normandy; and from which a good brandy is distilled.

The cultivation of beet-root was, at one period, a matter of some importance to the Germans, and various manufactories were established for the purpose of extracting sugar from it as well as from other vegetable substances. At one of these establishments called La Source, Jacob says, that they fed fifty cows on the refuse. The milch cows maintained on it were in good condition, and the butter they afforded was of excellent quality.*

The Germans, in most of the wine districts of the Rhine, distil from the skins of grapes that have been pressed, a spirit called *troster*, which they mix with ground barley or rye, and ferment in the usual way. This spirit is considered very wholesome, and forms a great article of commerce between them and the Dutch. From Upper and Lower Austria, immense quantities of this liquor are sent into Holland, where, after a second distillation, it assumes the name of gin, and is exported to various parts of Europe. The prevailing notion that all foreign gin is manufactured in Holland is erroneous, as Dr. Render assures us that the greater part is manufactured in Germany. The revenue it produces forms a very considerable branch of the Austrian finance.

At Vienna, Krems, Waidhofen, Lintz, Freystadt, Ems, Gmunden, &c. several distilleries are employed, not only in this manufacture, but in that of grain exclusively. A considerable portion of the produce of these stills is transported to Moravia, Bohemia, Styria, Carinthia, &c., some is sent into Hungary; but the quantity is trifling, as the people of that country distil for themselves. Almost every peasant there may obtain leave for that purpose on payment of two florins, or four shillings and six-pence, to the landlord from whom he

* Jacob's Journey through Germany, p. 56.

rents his farm. There are several distilleries of importance at Fiume, Ujlak, Pilis, Buda, Pesth, Rosenau, Presburg, Steehlweissenburgh, Debritzen, &c.* in which distillation is carried on from several sorts of grain, wine, and the refuse of the vintage, from plums, prunes, and various other fruits, and from potatoes. The principal part of these spirits is sold at the fairs in the country, of which there are above 2,000 in the year. At these fairs, they are exposed in booths or magazines in casks, to the amount of many thousand eimers. The stills in general use are made of copper, but are not of large size : wood is the common fuel, though in some places peat is used.

Distillation from potatoes has been long carried on in Germany, particularly in Lithuania, Hungary, and the eastern part of Prussia, &c. ; and the residue, after the termination of the process, proves of the greatest benefit to cattle, particularly to cows, as it increases their milk. The spirit is considered superior in taste to ordinary malt spirits : some add $17\frac{1}{2}$ bushels of malt to 100 bushels of potatoes, but 10 bushels have been found sufficient. This quantity of Berlin measure yields five muids of brandy from 36 to 32 per cent. of alcohol ; the muid contains 240 canns. Others have found that the same quantity of alcohol is produced from 100 bushels of potatoes, as from 24 bushels of wheat or 33 of barley.

The same sized vessels are used as those for malt spirits made in equal proportions, and nearly the same quantity of fuel, as the potatoes are steamed by the vapour of the water which is heated for mashing, so that it is only in the space of $\frac{3}{4}$ of each hour, during the process, that any extra fuel is required.

The potatoes are steamed in a barrel strongly hooped, and placed on a stool by the side of a still. The end which is uppermost has a square hole, fitted with a close cover, by which the barrel is filled with the potatoes; a smaller opening, with a door shutting very close, is made at the bottom of the barrel to extract the potatoes when ready : there are two holes, one to receive the neck of the still, and the other in the middle of the lower end of the barrel, to turn out the condensed steam ; this latter hole has a basket over it to prevent its being stopped up.

As soon as the potatoes are sufficiently steamed, which is known by taking out some of them by the door in the side of the barrel, the neck of the still is taken out of the barrel, and the potatoes are drawn out into a hopper, from whence they pass through two wooden or stone rollers that are placed horizontally near the door by which they are extracted. The rollers are turned inwards by means of a handle,

* Bright's Travels in Hungary, 4to. p. 228. 618.

and have below them iron scrapers to clear them. The bruised potatoes fall into a trough, from whence they are taken and well mixed with the mash made of ground malt.

In some instances, the yeast of beer is used as the ferment; in others, artificial yeast made of rye-meal, mixed at first with cold and afterwards with boiling water, so as to form a thick consistence: some yeast of beer is then added, and afterwards the artificial, at different times, so as to keep up the fermentation.

As potatoes work much easier than malt, less yeast is required, and the fermentation is very rapid; in some instances, a thick crust is formed.

Professor Balling, of Prague, has succeeded in making an excellent beer from potatoes, which is strong and well flavoured: his process has been practised with success in various places, and differs little from that observed in preparing the wash for distillation. The Germans have been very assiduous in turning this vegetable to various useful purposes; and amongst others, we are indebted to the ingenuity of the Prussians for a valuable sort of cheese, which is said to keep for many years.

Notwithstanding the extent to which wine is made, and distillation is carried on throughout various parts of the German empire, immense quantities of spirits are yearly imported. In 1802, there were 470 pieces, 198 casks, 1101 pipes, 16 chests, 33 hogsheads, and 14 ankers of brandy imported into Hamburgh, besides 15 casks, four pipes, and one chest of arrack; also 215 pipes, 72 pieces, 52 casks, and 1347 ankers of Geneva, together with 2991 casks, 399 hogsheads, and 2236 puncheons of rum. This vast supply always finds a ready consumption in the interior, whither it is carried by means of the Elbe, &c. In the same year, wine to the value of 2,381,815 florins, were sent from Hungary into the German States of Austria, including Galicia, while wine, and other liquors to the amount of 29,865 eimers, valued at 219,989 florins, were sent into Hungary. The greater proportion of the wine and spirit trade of Germany consists in an internal commerce, and an interchange of the produce of one province with that of another: its external or foreign trade being principally confined to the free towns. The table in the Addenda shews a return of the wine sent to Great Britain from the Austrian dominions, including Hungary and the districts of the Rhine, for the years therein specified. Bees are so plentiful in Austria, that 1,200 tons of wax, and 19,500 tons of honey, are annually produced.

A good description of wine is produced in some parts of Bohemia. The red wine of Melnik is considered of superior quality, and resem-

bles Burgundy: that of Leitmeritz is a very pleasant wine, but inferior to the other.*

The extent of the Bohemian vineyards, as stated by M. Blumenthal, is about 4,408 joch, and the produce something less than six eimers the joch, making 26,448 eimers for the whole: the eimer being equal to 15 English wine gallons, shows a produce of 60 gallons, or nearly a hogshead to each English acre. From the cherries of this country, which are very large and of a delicious flavour, a superior brandy is distilled.

Although Moravia is as fertile as Bohemia, and as well cultivated, yet the wines produced in that province are not considered of equal quality. Among the lower order, spirituous liquors are commonly in use. About Gratz, a species of white wine is produced of inferior quality. In Trieste, from which there are 600,000 bottles of *Rosoglio* annually exported, there is a cordial known by the name of *Zora*, which is a great favourite; and the drink called *Sirmischer Slivovitz* is here to be met with, as well as at Vienna and Prague. It is distilled from fermented plums, and is made in Sirmia, near Belgrade, the capital of ancient Illyricum. In the vicinity of Trieste, the wine is in general disagreeable, either from imperfect fermentation, and being used in too fresh a state, or from being too old and having become acid: that of Proseco is the best in the country.

The Bohemian malt drinks have been long celebrated, particularly those of Prague, in which city breweries are numerous, and well conducted. The produce of a quarter of malt, 32 bushels, is from 100 to 112 gallons. In the process of brewing, the boiling fluid, after being conveyed to the mash-tun, is suffered to remain till at a temperature of from 115° to 122° when 14, two quarters of ground malt are thrown in, after which the mashing commences, and continues for upwards of three quarters of an hour: during this time, water, or the remaining liquor of the former brewing is run in, so as to raise the heat from 138° to 147°, according to the practice and judgment of the brewer. When the mashing is completed, and all the liquor drawn from the copper, as much of this liquid as the copper can hold is sent back, and brought to the boiling point, and then poured on the quantity remaining in the kieve, when it is again mixed with what was left in that vessel, and brought to the temperature of about 154°. A third mashing is conducted in the same way, leaving the goods in the tun at the temperature of 165°, and a fourth mashing leaving the heat at 176°, terminates these operations. At this stage, the liquid is

* Bramsen's Letters, vol. i. p. 60.

allowed to remain in the kieve for an hour, and is then run into the underback, by an ingeniously contrived false bottom, perforated with holes, from which it is conveyed into the copper, where it mixes with that portion of the fluid which remained. When this last charge has boiled for about 15 or 20 minutes, it is returned to the mash-tun, shewing at the surface a heat of 183° ; about 35lbs. of hops are then added to about two-thirds of a barrel of the drainings in the underback, and the whole is put into the copper and boiled for 45 minutes, when half of the hops are withdrawn, and set aside for boiling with the remaining worts in the tun. These two quantities, after an hour's boiling of each separately, are taken to the coolers. The copper is again filled with liquor, and when boiling, poured on the goods in the kieve without mashing. After being drained, it is boiled along with the hops of the two preceding worts, for an hour and half, and then cast into a separate cooler. After being brought from 68 to 72° temperature, the three worts are mixed with 24lbs. of barm, and then barrelled. Here the fermentation takes place, which continues for three or four days ; and in about as long again, it is fit for storing. The floors of the vaults which are employed for this purpose are covered with ice, on which the barrels are placed, when received from the brewer, when, after remaining for five or six weeks, the beer is then considered fit for use. At Vienna, the malt is bruised by iron rollers, and thrown into the mash-kieve, where it is mixed with cold water, in the proportion of 28 barrels of water, to 14 one-third English quarters of malt. In the mean time, a square copper is heating with liquor, into which are put from two to three barrels of the cold worts, from the kieve, being part of four barrels let into the under back ; when this mixture comes near boiling, the head is skimmed, after which it is boiled three quarters of an hour. About 18 or 20 barrels of it are then run into the mash-tun, where the whole is completely mashed for nearly an hour, and the heat raised to the temperature of 104°. At this period, the small quantity of cold worts which had been left in the underback is pumped into the copper, and the wort which is in the mash-tun is slowly conveyed into the underback, from which it is again pumped, until the copper is full. About a barrel is now left in the underback, while the remainder of the worts lies in the kieve : the second mashing is conducted in a similar manner ; and the copper, when just at the boiling point, is turned on the goods in the mash-tun, and mashed for an hour, leaving the heat at 135°; having settled a little, they are drained from the tun, pumped into the copper, and boiled about 30 minutes. Being now quite clear, they are returned into the kieve, mashed for half an hour, and left at a heat of

162°. On opening the cock, the first eight or ten gallons being foul, are thrown on the goods, and the rest pumped into the copper till full; boiling is now kept up for half an hour, when as much is run into the kieve, as will leave room for the quantity left in the underback; the copper is again suffered to boil another half hour, when the whole contents are run on the goods: it is then charged with cold liquor till about half full. Mashing for the last time is continued half an hour, the heat being about 180°, and the liquor is permitted to rest for an hour before draining. The run from the mash-tun next commences, and the liquor in the copper being entirely run off into another vessel, the pumping of the worts from the underback takes place: 48lbs. of hops are now put into the copper, and the pumping continued until it is full, the underback retaining the remainder of the run from the kieve. The surface of the grains is skimmed, and the liquor which had been kept apart as above-mentioned, at a heat of 133°, is thrown on them; the whole of this mixture is allowed to remain in the kieve till room is made for it in the copper: the worts and hops having boiled an hour and a quarter, part of them are cast; but before let on the cooler, 12 gallons of cold wort reserved from the first mash for this purpose, at a corner of the cooler, are spread over the bottom. The worts in the kieve, as well as those in the underback, are pumped into the copper, and boiled with the hops an hour and half, the second worts are then cast and the brewing is finished. Lest any saccharine matter should remain, some cold water is mixed with the grains, run off and carried to a distillery, one of which is connected with every brew-house: the quantity of beer produced from such brewing is 34 barrels. From the coolers the worts are let down into a tun at a heat of from 86° to 90°, well mixed with 60lbs. of yeast, and when fermentation appears, the whole is drawn off into casks of 25 gallons each, and placed on stillins where it is kept working till fit for consumption. There is no malt duty charged at Vienna, but there is a city and country duty on beer, the former of which is much heavier than the latter.

The brewers of Vienna keep up their establishments in respectable style; and among the carriages which generally throng the roads leading to this city, are numbers of brewers' drays drawn by large Flemish horses, with harness decorated with broad, glittering, brass plates. These drays are invariably attended by dogs of a peculiar breed, having enormous heads like lions; they seem, however, to be kept rather for show than for any protection they afford, as they are gentle and docile. The population of Vienna in 1833, was 329,873 inhabitants, being about 70,000 more than Berlin. The city has 40 public, 80 coffee, and 500 smoking-houses.

The practice of smoking, which has rendered so many houses for the enjoyment of this luxury necessary at Vienna, is so prevalent throughout Germany, that it has become not only a national failing but a nuisance. If it would add either to the dignity or comfort of man, it would be the more excusable, but the reverse is the case, for while it wastes property, which could be otherwise usefully employed, it generally superinduces habits of drinking, and in no respect contributes to the health or character of the individual who uses it. Sir Arthur Brooke Faulkner, in his Visit to Germany, thus writes on the subject :*—

" The length to which the Germans push the practice of smoking, is quite insufferable to the unpractised nose of the alien. It is true, you may avoid the society of smokers by shutting yourself up, but even this will not avail, unless you are hermetically sealed. There is hardly an occupation with which one can suppose it possible to conjoin the process, whereof the tobacco-pipe is not the accompaniment. The coachmen drive and smoke ; the cavalry officer is seen smoking while he rides at the head of his regiment ; the peasantry smoke at the plough and the spade ; during the frosty weather, you were met at every corner where there was a sheet of ice, by groups of persons skating and smoking. I am sure it is no small deduction from the luxury of eating and drinking, that smoking cannot be combined with them. Whether a German sleeps and smokes, I have not inquired ; but if it be not physically an impossibility, I would take an even bet that he does. Their wives might tell us."

From the attention paid to the care of bees, honey is produced in abundance ; *mead* is manufactured, and is of some moment in the trade of the country. Many of the distillers purchase the honey for the making of *rosoglio*, and use it as a sirup instead of sugar. Some farmers are so extensive in the rearing of bees, that they have from three to four hundred caps under management at one time ; and for the purpose of feeding, the bees are often transported from place to place, where buck-wheat, or lime-trees, are plentiful. On these occasions it rarely happens that any accident or loss is sustained, the bees returning instinctively to their respective stocks, with a precision and an accuracy truly marvellous.

It appears that the name of *aqua vitæ*, and the practice of distilling spirit of wine, from aromatic herbs, were known in Hungary so early as the fourteenth century, and that a queen of that country rendered herself famous by a medicinal preparation from rosemary

* Visit to Germany and the Low Countries, 2 vols. 8vo. vol. i. p. 237.

in which *aqua vitæ* formed a principal part. The receipt for making it was copied from her breviary by Prevot, who died in 1631, and whose book was published by his two sons at Frankfort, in 1659; it runs thus :—" Take of *aqua-vitæ* four times distilled, three parts, and of the tops and flowers of rosemary two parts. Put these together in a close vessel ; let them stand in a gentle heat fifty hours, and then distil them. Take one dram of this in the morning, once every week, either in your food or drink, and let your face and the diseased limb be washed with it every morning. It renovates the strength, brightens the spirits, purifies the marrow and nerves, restores and preserves the sight, and prolongs life." Among the Germans, the manufacture soon became of such importance, that many of the nobles kept stills for the purpose of distilling waters of all sorts, for the benefit of their families and the poor. An instance of this may be found in the consort of Philip the Second, Duke of Grübenhagen, a princess of Brunswick, who in 1560, supported a still and laboratory of that kind, at her palace at Grubenhagen, in the circle of Lower Saxony.* Tacitus has given an early proof of their skill in the making of beer,† and their celebrity in the brewing of that beverage seems to have gathered strength by time. The quantity furnished in the different cities and towns is immense. Some years since, there were no fewer than two hundred and fifty privileged brewers in the town of Rostock, who exported annually 800,000 barrels, under the name of Lübeck beer, the excise raised from which composed the chief revenue of the Duke of Mecklenburgh. The *Mum* of Brunswick is well known, and justly appreciated for its good quality. The process observed in the manufacture has been, it is said, always kept secret ; and to prevent discovery, the men who brewed it were hired for life. The following receipt was procured by General Monk, at the court of Brunswick, in the reign of one of our Charleses, and is given in the Harleian Miscellany :‡—" To make a vessel of sixty-three gallons, the water must be first boiled to the consumption of a third part. Let it then be brewed, according to art, with seven bushels of wheat-malt, one bushel of oat-malt, and one bushel of ground-beans ; and when it is tunned, let not the hogsheads be too full at first ; when it begins to work, put to it of the inner rind of the fir three pounds, of the tops of fir and birch, each one pound ; of *carduus benedictus* dried, three handfuls ; flowers of *rosa solis*, two handfuls ; of Burnet,

* Beckman's Hist. Inven. vol. iii. p. 148.

† De Moribus Germanorum, sect. xxiii.

‡ Harleian Miscellany, vol. i. pp. 524--5. London, 1744.

Betony, Marjoram, Avens, Penny-royal, flowers of Elder, wild thyme, of each one handful and half; seeds of *cardamum* bruised, three ounces; bay-berries bruised one ounce; put the seeds into the vessel: when the liquor hath wrought awhile with the herbs, and after they are added, let the liquor work over the vessel as little as may be, fill it up at last, and when it is stopped, put into the hogshead ten new-laid eggs, the shells not cracked or broken; stop all close, and drink it at two years old; if carried by water it is better."

"Dr. Ægidius Hoffman added water-cresses, brook-lime, and wild parsley, of each six handfuls, with six handfuls of horse-radish, rasped in every hogshead; it was observed that the horse-radish made the *Mum* drink more quick than that which had none."

With regard to the origin of the term *Mum*, no decided opinion can be given. It is said to come purely from the German word *Mumme*, the name of a strong ale, which, from its intoxicating qualities, produces silence, by rendering its votaries incapable of utterance. This term answers to that applied by the Danes to a mask, because it exhibits the parties using it, wearing, as it were, a new face. The most plausible derivation of the term is, that this drink was invented by Christian Mummer, of Brunswick, and that the word *Mum* is merely an abbreviation of his name.

In ancient times it appears to have been the practice to mix a great variety of ingredients in the manufacture of almost every kind of beverage, and the more singular the taste or flavour, the more highly prized was the article. Of what description the *Mum* made as above described was, must be left to the conjecture of the reader. The following practice, stated to be in use a few years since, appears more in accordance with modern improvement:—The malt was mixed with a greater proportion of water, than was used in brewing beer or ale; after remaining saturated in the mash-tun for about two hours, it was drawn off and re-boiled. This liquid was again introduced into the kieve, on a quantity of fresh malt merely wet, and which had stood there soaking for about an hour in water; after this the worts were drained off and pumped into coolers, from which they were sent to the coppers, and boiled with a large quantity of hops for some hours. The produce was of a rich glutinous nature, and after undergoing a partial fermentation, it was put into casks for sale, under the title of *Mum*. From the materials left in the kieve, two other brewings were effected, the first making a strong kind of beer, and the second an inferior sort, or table drink. None of these drinks, however highly they may rank in Germany, are equal to the beer, ale, or porter brewed in the British empire. In many parts of Germany, the people brew for themselves, as is customary in Great Britain.

The wine of Grünberg is famed for its astringent qualities: it is manufactured in large quantities from the grapes of the vineyards that surround the city, and is much used to increase the strength of inferior wines. It is an apophthegm in Germany, when speaking of this wine, to say, "you can mend the holes of a stocking by putting some Grünberg wine into it!"

At Lübeck, there are numerous sugar-refineries, and considerable quantities of sugar are extracted from the beet-root.

In Germany, says a late writer, I have not seen three people drunk in three months. In Bavaria, and the north, the common people drink a good deal of beer, but it is like the fine Edinburgh table-beer in strength and appearance. It is weak, highly fermented, and strongly hopped, and an immensity is drunk without intoxication. In the kingdom of Prussia, the principles of the Temperance Society have made astonishing progress. Publications inculcating the doctrine of abstinence from intoxicating liquors, are read at school by the young, and thus Temperance principles form a portion of daily and practical education.

In Switzerland, which is one of the most mountainous districts of Europe, the cultivation of grain has been so limited, as scarcely to admit of distillation. The surface, soil, and climate are so irregular and diversified, that in some places, grapes do not ripen, while in many others, even corn does not arrive at maturity—the inhabitants are often seen reaping on one side of a mountain, and sowing on the other. In the plantation of the vines, the hills are, in many places, cut into terraces, from which, particularly about the lake of Geneva, grapes and wine of a tolerable quality are obtained. The vines are chiefly trained either against trellises or kept low, and tied to short poles.

At what time the vine was first cultivated in Switzerland, we are not informed, but it is very probable that it was introduced into that country by the Romans, since we learn from history, that the Helvetians paid peculiar veneration to the god of wine, and preserved his gifts not in wine-cellars, but in casks; and that experiments were undertaken in agriculture, so that the Falernian hills were rivalled by the vineyards of the Rhine. In corroboration of this, Roman measures have been found in the country; and so late as 1807, four great amphoræ were discovered in a subterraneous apartment in the wood of Vaux.

Some of the vineyards on the Lake of Zurich are very old, and are said to have borne the vine for 500 years. The vines of Vevay, owing, it is supposed, to their exposure to the sun, are accounted the

finest in Switzerland. The best wine comes from St. Saphorin, a hamlet adjoining the town. In the canton of Berne, the mountains are covered with vineyards, and those between Vevay and Lausanne are much esteemed. Vines are planted in the valleys on the northern and southern frontiers. The red and white wines of Malantz are reckoned the best in the canton of the Grisons. In the canton of Basle, the hills are covered with the finest vineyards, from which good wines are produced. Near the capital, in the field of St James, is grown that celebrated red wine called "the blood of the Swiss," from a sanguinary conflict between 30,000 French, commanded by the Dauphin, afterwards Louis XI., and 1,600 Swiss, in which 6,000 of the former were slain, while only 16 of the latter remained to describe the valorous achievements of their brethren. From this memorable circumstance, the following couplets, termed the *Drinking Song of the Men of Basle*, must be read with interest :—

Drink ! drink !—the red, red wine,
That in the goblet glows,
Is hallow'd by the blood that stain'd
The ground whereon it grows !

Drink ! drink !—there's health and joy
In its foam to the free and brave ;
But 'twould blister up like the elf-king's cup,
The pale lip of the slave !

Drink ! drink !—and as your hearts
Are warm'd by its ruby tide,
Swear to live as free as your fathers liv'd,
Or die as your fathers died !*

The richness of the valleys and the declivities of the mountains of Switzerland afford abundance of fruits, in the cultivation of which the inhabitants have been very successful. From many of these, particularly from the Machaleb cherry, a very superior spirit called *Kirschenwasser* or cherry-water, much resembling our whiskey, is manufactured. This, in the opinion of Stolberg, is no way inferior either in purity, strength, flavour, or taste, to that made from corn at Dantzic † Coxe also speaks of it as a pleasant spirit, and many agree, that it is not excelled by the Dalmatian *maraschino*. It is distilled in the cantons of Zurich, Schaffhausen, Lucerne, Berne, Neufchatel, &c. Quantities of it are exported yearly to Germany, Italy, and France, and it ranks in quality with that exported from the depart-

* Planchè's Lays and Legends of the Rhine.

† Stolberg's Travels, vol. i. p. 146.

ment of the Upper Rhine. Cider is also manufactured to some extent, and is an article of great importance in their traffic with the neighbouring countries.

Brandy is distilled in Switzerland from the refuse of the grapes, after the must is pressed out, in the following manner:—Casks are filled with the skins, which are squeezed as compactly as possible, and are covered closely to prevent the ingress of air: fermentation generally sets in, in about three days; and when it has subsided, which occupies a considerable time, it is then deemed fit for the still. When the process of distillation is about to take place, the fermented mass is mixed with a due proportion of water, that preserves it in a proper consistence for the action of the fire, which is moderately applied to prevent empyreuma, or burnt flavour. It is calculated that a vessel containing 32 cubic feet of this material will yield $19\frac{3}{10}$ or ten gallons of pure brandy.

Through the Pays de Vaud and several of the cantons where the vine is cultivated, good brandy is made, but not to such extent as to require particular notice. When Clarke travelled through the country, the best wines were sold for six-pence per quart, and the worst for three half-pence. In 1779, there were exported 10,029 casks, each containing 80 bottles; in 1781, 24,568 casks, and in 1782, 11,354.*

Although in Holland, as in Switzerland, the quantity of grain reared is inadequate to the consumption of its inhabitants, yet there are few countries better supplied with that necessary of life. From Russia, Poland, Elbing, Koningsberg, and Flanders, are drawn those immense resources, which not only enable the Dutch to export grain in large quantities, but to distil it to great extent. When Dr. Shannon visited that country in 1774, there were at Weesoppe, in the vicinity of Rotterdam, 300 stills of from 300 to 500 gallons each; at Scheidam, in the following year, there were 120 stills, and in 1792, no less than 220. The entire stills of the province amounted to 400, and their average contents were from 250 to 400 gallons. It has been calculated, that the annual produce of spirits in the Dutch distilleries, is nothing short of 14,000,000 of gallons, 4,560,000 of which are consumed in the country. Antwerp was formerly celebrated for its extensive trade in wine and other liquors. In 1560, according to Guicciardini, 40,000 tuns of Rhenish wine were brought annually to Antwerp, from which it was exported to the various countries trading to that city, and then sold at 36 crowns the tun.

* Coxe's Travels in Switzerland, vol. i. p. 58.

The best Geneva we now have, is obtained from Holland, and is made, according to Dr. Rees, from an ordinary spirit distilled a second time, with an addition of some juniper-berries. The original liquor, however, is prepared in a very different manner.

It was a custom in the distilling of spirits from worts, or other fermented liquors, to add in the working some aromatic ingredients, such as ginger, *cortex winteranus*, or grains of paradise, to take off the bad flavour, and to give a pungent taste to the spirit. Among other things used with that intent, some tried the juniper-berry, (*genevre*, as it is called in French,) and finding that it gave not only an agreeable flavour, but a very valuable quality to the spirit, the distillers adopted it generally, and the liquor has since been sold under the French name *genevre*, or, as it is rendered in English, *geneva*. It is highly probable that this spirit, now so esteemed throughout Europe, owes its name to the juniper wine, invented or brought to perfection by Count De Morret, son of Henry IV. of France, to the use of which he attributed his good health and long life. This liquor was considered so wholesome and made with so little expense, that it was called "*the wine of the poor.*"

The juniper-berries employed in the distilleries, are generally brought from Germany, Italy, or Sweden. In the latter kingdom, they are frequently made into conserves and are eaten at breakfast. The Swedes prepare from them a beverage which they consider useful as a medicine; and in some places, particularly in Lapland, they are roasted and substituted for coffee. The exports of juniper-berries for the use of distillers, are about 350 barrels annually, and the imports of Holland from Odessa alone in order to supply the manufacturers of Geneva, are very extensive. This aromatic berry is found in various portions of the globe: Dr. Gerard met it in abundance on the Himaleh mountains, at an elevation of 13,300 feet above the level of the sea.* In Sweden, it is a practice to strew the floors of the apartments with juniper sprigs over which sand is scattered,—a practice once prevelant in the presence chambers of sovereigns. In Carniola, a kind of wine is made from juniper-berries by steeping them in water, of which the inhabitants seem very fond; but in Holland their chief use is in the distillation of geneva. The berries remain two years on the trees before they are ripe. In the mode formerly practised, the juniper was added to the malt in the grinding; a proper proportion was allowed, and the whole was reduced to meal and worked in the common way. The spirit thus obtained was

* Gerard's Letters, published in the Calcutta Transactions.

flavoured *ab origine* with the berry, and exceeded all that could be made by any other method.

The two principal modes observed in the preparation of wash for geneva are thus described: A quantity of rye-flour, coarsely ground, is mixed with a third or fourth part of barley-malt, proportioned to the size of the tub in which the vinous fermentation is to be effected. This they mix with cold water, and then stir it with the hand to prevent the flour from gathering into lumps, and to facilitate its dissolution. When this point is attained, water is added of the heat of human blood. The whole is well stirred, after which the ferment is mixed with the wort, having been previously diluted with a little of the liquor. The fermentation generally begins six hours afterwards; if it commence earlier, there is reason to apprehend that it will be too strong, and means are employed to check it. If the fermentation be well conducted, it generally terminates on the third day, when the liquor becomes transparent, and assumes an acrid taste, hot and fiery on the tongue. Having attained this point, the wash is well roused or stirred, and the mash with all the corn is put into the still, and then commences the first distillation, which is conducted very slowly. This is a matter of the utmost importance, as it is considered that when the first distillation proceeds rapidly, the essential oil goes over with the spirit, and mixes with it so intimately that an unpalatable taste of the grain is imparted, which no subsequent process can neutralize without employing ingredients hurtful to health. This liquor is then rectified over juniper-berries once or twice, according to the sort of spirit which it is intended to produce. For common use, one rectification is deemed sufficient, though it is not considered so fine or pleasant, as that which has undergone several rectifications, and which is called *double geneva*. Some distillers mix the juniper-berries with the wort, and ferment them together; but in that case they only draw a spirit from it for the use of the interior, or for exportation to England; the juniper, however, is most commonly used at the rectification and not before.

The second method pursued by the best distillers is as follows:— The malt and rye are mixed with warm water in given proportions, and thoroughly blended together, until all the farinaceous substance is incorporated; the liquid is then allowed to rest until the flour has settled at the bottom. The wort is afterwards permitted to flow into the fermenting tub, where a similar operation takes place, with another quantity of water poured upon the same grain, and these operations are repeated, until the wort thus drawn from it at different times, has abstracted the whole saccharine matter in the flour. This

liquid is put into the fermenting tun or vessel; and when it comes to the proper temperature, about blood heat, the ferment or yeast is added. The fermentation is considered milder and more regular, by this method than the other.

Another practice in making geneva is, to use in proportion as follows: viz.—One hundred of barley-malt, two hundred of rye-malt, mashed with 460 gallons of water at a temperature of 162°. When the infusion has been continued for a sufficient time, cold water is added until the wort is brought to about 45lbs. of saccharine matter per barrel. It is then run into a back, at a temperature of 80°, with half a gallon of yeast. Fermentation soon commences, and is generally finished in two days, when proper attention is paid to the temperature of the place. The wash is then put into the still, reduced to about 15lbs. of saccharine matter the barrel, together with the grains, and undergoes three distillations—a few juniper-berries and a small quantity of hops being introduced to communicate the flavour. Some pour all the water which they intend to use, into the tub or kieve at once, and put the flour gently into it, while two or more persons are employed in stirring it well with sticks made for that purpose, in order to mix the flour and prevent it from gathering into lumps: when the whole is properly reduced and mixed together, they proceed to draw it off into a cooler, before it is put into the fermenting vessel. In all cases the gravity of the wort is low, seldom exceeding forty degrees; and by distilling from a mixture of wash and grains, the produce is allowed to be much greater than that obtained in Great Britain from wash alone.* Gin is a spirit supposed to be produced only in its greatest purity by the Dutch, from the uncommon care taken in its manufacture, and its perfection is greatly attributable to the manner in which the wash is prepared, and the extraordinary pains bestowed on the fermentation in the course of attenuation. Certainly if care be not taken at this stage of the process, it would be difficult to produce a fine spirit free from any peculiar flavour, which is the great characteristic of good Holland gin, the spirit only discovering in any mixture, merely the aroma of the juniper. No grain is used in the Dutch distilleries but the most perfect kind, after it has undergone the process of malting. Wheat is considered the best for producing the choicest spirit; but barley is more productive. Rye, however, chiefly of Russian growth, is the principal article used, as it produces one-third of spirit more than wheat or

* Vide Parl. Rep. on Distillery Duties, 1799, apud Cookson's Obs., Appen. Dist. Rep., No. 2. p. 206.

barley. The fermentation of the wash is completed in about three days, and in the distillation the first operation is conducted very slowly and with great caution: in the second process, or re-distillation, the juniper-berries are introduced, which give it the peculiar flavour by which it is distinguished. Modern ingenuity, however, has artfully substituted oil of turpentine for the juniper, as less expensive and answering the purpose of giving it the peculiar flavour of this spirit. The cleanliness of the Dutch is proverbial, and this is no where more rigidly observed than in their distilleries, which contributes not a little to the excellence of the spirits. Lime water is chiefly used in cleansing the vessels, and the practice of plastering the staves of their fermenting tuns with lime is thus obviated; a practice much more commendable than that in common use, and less liable to produce acidity.

Kœmpfer attributes the discovery of this spirit to Professor Sylvius of Leyden, who died in 1672. Like brandy, it was first sold in the apothecaries' shops; but the distillers finding that it was drunk with avidity by the common people, commenced the manufacture of it themselves, and it shortly after became an article of great trade. The Dutch, whose mode of distilling enabled them to obtain a milder spirit than the people of other countries, succeeded better in the manufacture, and for a series of years it seemed to have been in their hands a complete monopoly: but as it has been imitated with success in other parts of the world, they have now many rivals, and the exportation of this article has been considerably diminished.

The geneva imported into Great Britain from Holland, for the year ending 5th January, 1834, appears to have been 347,597 gallons;* for the year ending 5th January, 1835, 277,141; and the quantity that went into consumption for the latter year, 19,648 imperial gallons.†

In 1831, the duty on distilled spirits in the Netherlands amounted to 2,905,350 francs; in 1832, to 4,560,238 francs; and during 1834, it was estimated at 5,922,744 francs. This increase was owing to the favourable operation of a new law. Although spirituous liquors are consumed to a considerable extent, drunkards are rarely ever seen, except in a few instances, among the lower orders of the people. The tobacco pipe and goblet are inseparable companions after dinner, but the Dutchman prefers the practice of fumigating his head with smoke, to that of steeping his senses in the oblivious waters of Bacchus.

The stills used by the Dutch are those of common construction; improvements, however, have been introduced, amongst which is that

* Parl. Tables, p. 19. Vide Addenda. † Ibid.

of M. Cellier Blumenthal, being an alteratiou of Derosne's apparatus adapted to the distillation of the wash in continuation, and by means of which rectification can be carried so high as to produce the strongest alcohol.

The brewing of beer and ale was early practised in the Netherlands. Isaac and John Hollandus, who were natives of that country and flourished in the thirteenth century, have written with great ability on the subject, as well as on fermentation and distillation. Delft, among other places, became famous for its beer, and it was for many years the great staple of that port; what is now made there is chiefly consumed in the neighbourhood. At Gouda and Muyden, it is made in great perfection, and in the latter place, on account of its valuable qualities, it is called Flemish physic, while London porter is imitated with success. At Brussels, there are great varieties of malt drink, and of beer not less than thirty or forty sorts: that of Louvaine, in South Brabant, is said to be the most esteemed.

There the number of brewers are about 24, some of whom make 300 barrels of beer weekly. Mr Booth has detailed the proces of manufacturing two sorts of beer in that city, named *Pieterman* and *Whitebeer*—Seven quarters and a half of barley malt, and as much raw wheat, both finely ground and mixed together, are put into 18 sacks; also seven quarters of finely-ground raw wheat are put into sixteen sacks, from which 40 barrels of strong *Pieterman*, 35 of table beer, and 12 barrels of small beer are produced. Two coppers, two mash tuns, and five coolers, are employed, but as the method of brewing is never likely to be practised in Great Britain, a particular description seems superfluous. No saccharometer is used to direct the superintendent, the whole process depending on his taste and experience. When the brewing is collected in the tun and well mixed with yeast, the drink is drawn off into casks placed on their end, and holding about a barrel and half each; here the fermentation commences, and is finished in about forty-four or fifty hours. No kiln or fuel is used to dry the malt, the air being the only medium of effecting that purpose. On this account the grain is spread on upper lofts; but, from this defective system, no malt can be made in the winter season: barley alone is employed, from which the dust is never separated; hence the grain, from the nature of the drying, never attains that crispness and sweetness which are the characteristics of good malt. The grain and hops are of a very fine quality, and the latter forms an article of considerable commerce. The beer is sent to Antwerp, Brussels, Liege, Tirlemont, and other places, to the amount of 150,000 casks annually. What adds to the

reputation of the beer of Louvain, is the peculiar quality of the water. The brewers of Brussels use malt and raw wheat in equal proportions, and from four quarters of each, when finely ground, 19 barrels of strong beer are drawn. To prevent too much adhesion, a quantity of wheaten chaff is thrown into the tun, and the whole moistened with cold water, after which it is mashed with 18 barrels of hot liquor. This mixture is of a thick consistency, and the heat after mashing is about 122°. Having remained in this state about an hour and a half, it is run into the underback, immediately pumped into the copper, and is mixed with 56lbs. of fine hops. From the thick nature of the worts, the run is slow, but to facilitate the process, wicker baskets are plunged into the kieve, through the interstices of which the worts flow, and are drawn out by small bowls or ladles.

A second mash with ten barrels of liquor, is permitted to stand an hour. Three other mashes succeed, ending at the temperature intermediate between 134° and 173°. These mashings being collected in the copper and at the boiling point, three handfuls of unslacked lime are thrown in, and the whole is boiled for eighteen hours. The worts being sent to the coolers, are allowed to remain there till they become quite cold, in winter even to the freezing point, before they are put into the fermenting tun, where they lie for two days without any apparent change, and then run into casks to undergo fermentation. This beer is kept for many years; at the end of the first year it is muddy, but at the end of the second it is clear, and the longer it is kept the lighter it becomes. The beer of the winter brewing is termed *Pharo,* and that of the summer, *Lambie.*

There are extensive breweries in Bruges, and the facilities which the manufacturers have of obtaining grain, of which large quantities are exported, render the trade in malt liquors extensive and beneficial. Mrs. Trollope mentions a very grotesque group, in alto-relievo, which she saw over the door of a brewery in that city: it represents the process of brewing, with several figures employed in mashing, cooling, and putting the beer into casks; while winged seraphs are are seen tasting it, with the blessed Virgin and her infant son looking on.* Making sugar from beet-root was an object of attention at the time Buonaparte had a control over Continental affairs; but the manufacturers had so much the advantage over the farmers, that the latter thought that their land could be turned to a more profitable purpose, and the trade consequently declined. When the West Indian sugar stood at five shillings the pound, the beet-root article could be purchased at less than one shilling.

* Belgium and Western Germany, vol. i. p. 28.

The process of making the sugar consisted in reducing the clean roots to a pulp, by means of a cylinder perforated with holes like a grater, and revolving in a trough. The pulp formed by this machinery was put into bags of hair or linen cloth, and pressed much in the same manner as that observed in making the dry barm at Paris. The liquor was collected, boiled, and after being mixed with a proportion of lime, the saccharine matter was precipitated; a solution of sulphuric acid being added, and the whole being boiled a second time, the saccharine matter became then granulated, and the sugar, when refined, of a very good quality. This manufacture is not now of much consequence, since the free admission of West India and other sugar into that country. Distillation from the beet-root has been tried; but where grain is so abundant, it supersedes the necessity of extracting spirits from this vegetable.

In Hanover, although there are various tracts of heath and marshy ground, the soil produces most of the grains and fruits of Europe; even the grape is cultivated in some places for making wine. The beer of this country has been long celebrated for its excellence, and upon this article and spirits, an annual revenue of upwards of sixty thousand pounds is levied. There are few towns in the kingdom in which distillation is not carried on, while the breweries are numerous. The principal establishments are at Embeck, Gosslar, and Hanover: the latter is noted for a particular kind of beer, which is held in high estimation throughout the country. The Embeck beer was once accounted the *Burton* of Germany, and vended in every part of the Empire. In the fifteenth century it ranked so high, that a barrel was considered of equivalent value to a hogshead of wine, and was the favorite drink of the sovereign. One of the largest houses at Hamburgh was built for the express purpose of selling this liquor, which is still known by the name of the *Eimbeckischen Haus.* After all the praise that has been lavished on it, the modern beer of Great Britain is considered superior to it.

A brewer previous to his commencing work, must notice the proper officer, stating the time when the malt is to be mashed, with the quantity and kind of grain to be used, also the hour when the vats are to be filled; and the duty is imposed in proportion to the quantity of grain, and the beer obtained. If the brewery is on a small scale, one shilling is charged for every bushel of wheaten malt, eight-pence for barley, and six-pence for oats: where the quantity of beer produced is large, the duty is then charged by the gallon.

A distiller likewise must inform the Collector before he begins to work, and have his still guaged, at the same time leaving the head

with that officer. The duty is charged according to the capacity of the still; and on each removal of the head for work, he is obliged to pay for the time it is kept, which cannot in any instance be for a shorter period than twenty-four hours, but may be for as long as he thinks proper, paying proportionally so much per day, according to the dimensions of the still, as already stated. Any infringement of those regulations is strictly punished according to law; but it is plain that these enactments are insufficient to prevent smuggling, inasmuch as a fraudulent trader may have in some concealed place, at all times, a second head for his still.

These regulations are nearly similar to what were observed some years ago, in Great Britain and Ireland. The collection of the revenue is managed by a board of eleven members, some of whom are appointed by the crown, and some by the states. The subordinate officers are six superintend nts over districts, each of whom are divided into circles, and in every circle there is a collector; subordinate to these again, are other officers, some of whom are posted at the gates of the towns and cities, and are denominated secretaries. The intelligent reader will readily perceive the regulations which follow from the appointments without further detail. It may be remarked that in Germany of late years, distilleries have increased, while breweries have decreased in the same ratio. This change, we are assured, has made no alteration in the morals of the people, as drunkenness is now less prevalent there than formerly.

The improvements in distillation have advanced considerably in the German Empire, but not to the extent observable in France and Great Britain. One great cause of this is attributable to Guild and Corporation laws, which tend to retard the progress of the mechanical arts, and to depress the exercise of the inventive powers and the ingenuity of the artisan. There almost every species of industry is restricted, and different trades have different privileges. Some curious regulations respecting them might be selected; among others, those of brewers and distillers have not been exempted. In Luneburgh, particular houses only had a hereditary right to distil brandy, and no other persons than the twelve representatives of those families could keep a distillery.*

Wine being so common and cheap, the Germans do not encourage distillation to the same extent as in other countries. What progress Temperance Societies may have made remains to be ascertained, but, if the following anecdote be authentic, it affords a curious specimen

* Hodgskin's Travels in the North of Germany, vol. ii. p. 181.

of the opinions entertained by some of the German divines on the subject of intemperance. In a sermon preached by one of them, he exclaimed that " intemperance consisted in passing those bounds which nature had prescribed. It was intemperance for men who were quarrelsome in their cups, ever to drink wine: to some a goblet was refreshment, to others, two caused sickness, and such were intemperate, when they drank more than one. Many enlivened society, and were kind when they had drunk four bottles, and it was not right in them to take less. Many more felt their hearts warm with gratitude to the Deity, as the generous juice circulated in their veins, when they had drunk eight bottles—with them intemperance began at the ninth. These persons he pronounced to be the peculiar favourites of heaven, and bowing to his congregation, he acknowledged with fervour, that he himself was one of those happily gifted mortals."

In the Prussian territories, the manufacture of ardent spirits has never been an object of great importance, at least in a commercial point of view, although few countries have finer grain, or are more extolled for the excellence of their ale. It was remarked by Wolfstane the Dane, when he navigated the Baltic as far as the country now called Prussia, in the eighth century, that the people there brewed *no ale*, because they had plenty of honey. This abundance of honey was noted many centuries before by Pytheas, when *mead* was the common drink of the meanest of the people, while the rich drank mares' milk, or, perhaps, a spirituous liquor prepared from it.* In the Polish department, strong waters are made from wheat, rye, barley, pulse, and also from cider. These are drunk chiefly by the common people, and often by the higher orders, who use them after they have been rectified with anise-seed, cinnamon, or other spices.

In the recent southerly territorial accessions of Prussia, the vine is in cultivation; and anise, canary, coriander, mustard, and poppy-seeds, are grown for the use of distillers and others. In Prussia, as well as in many parts of Germany, a brewery, a distillery, and sometimes a public-house, are the necessary appendages of every extensive farming establishment. Potatoes are distilled to a considerable extent, and it is calculated that two bushels of them afford the same proportion of ardent spirit as one bushel of barley. Nine bushels of potatoes are usually mixed with one of malt, to draw the wort, which, by distillation, produces a spirit, containing 80 per cent of alcohol, and paying a very unpopular duty of six-pence per gallon.

* Macpherson's Annals, p. 263.

Before it is sold to the retailers, it is reduced to 50 per cent of alcohol; and the sum paid by them is about fourteen-pence per gallon. The residuum, after the spirit is extracted, is given to cattle, and, in nutritive quality, is deemed equal to two-thirds of the value of the potatoes before the wort was extracted.

The cultivators of grain complain greatly of the heavy duty imposed on the distillation of corn, but without much reason, since the tax is paid at a high degree of strength, and the spirits are supplied to the retailers at a very inferior strength.

During the late protracted wars, many exertions were made, as well as experiments, by Von Thaer, to procure sugar from native plants, of which the common garden turnip was the most productive; from this plant, from beet, and other roots, sugar has been extracted of a colour, strength, and consistency equal to that of the sugar-cane.

Considerable quantities of *goldwasser*, a spirit infused with seeds and spices, are distilled at Dantzic, and from thence sent into the interior. The supplies of grain necessary for the stills kept at work in that city and neighbourhood, are drawn from the public granaries, which are so numerous and important, that a short description of them may not prove uninteresting. The buildings which compose them, says Oddy, are so extended, that they form a separate town, and consist of ranges of from four to five stories high. They are situated upon an island formed by the river Mottlau, which runs close by the city on one side, and is met by another branch at a place called the Forestadt on the other. There are three bridges on each side of the island, at the end of streets over it, from the city to the Forestadt. In the night, all the bridges are drawn up, excepting the two at the end of the main street, across the centre of the island, communicating between the old city and the Forestadt. On this island, are all the principal ware-houses for ashes, hemp, linens, and the extensive granaries forming seventeen streets, besides the large centre one that extends the whole length of the island. To guard these warehouses, from twenty to thirty ferocious dogs of a large size are kept, amongst which are blood-hounds; these are let loose at eleven o'clock at night. To command and to keep the dogs within their districts, as well as to protect the passengers from harm, there are large, high gates at the end of each of the streets leading to the main one. No light is allowed, nor is any person suffered to live on this island. The dogs prowl about the whole night and cause great terror. It would be impossible without them to keep property secure, amongst the hordes of Poles, Jews, and others who resort to Dantzic, as no exemplary punishment would have half the effect which the dread of

these dogs produces. In winter, when the water is frozen over, and when the dogs might be liable to stray, there are three keepers placed at particular avenues with whips, to drive them within their range. This brings to our recollection what Ælian tells us in his History of Animals, that a thousand large mastiffs were constantly kept at the temple of Adranus, which stood in the city of Adranum, now Adderno, and that they were taught to fawn upon such as brought presents to the temple, to conduct persons home at night, and to fall furiously upon thieves and tear them in pieces. In the Bazaar at Moscow, the property of the shopkeepers is protected at night by dogs chained to their doors. Under the arcade, a certain number of these animals are fixed to a long rope, placed from one end to the other, passing the doors of all the shops, which are locked up, and left solely under their protection.* The arsenal of Tripoli, in Africa, is guarded in like manner by immense dogs belonging to the Bashaw, kept for that purpose; but, to the disgrace of the governor, these animals are supported by the courtesans of the town, who are obliged to bring them food every day, at the expense of their own degradation. Owing to the measures adopted at Dantzic, no fire or robbery was ever known; and the expense levied on each building for these precautions is very reasonable, considering the immense property they contain. Vessels lying along side of those warehouses are not allowed to have a fire or light of any kind on board, nor is a sailor nor any other person suffered even to smoke. The corn annually received and exported from Poland, through the medium of those granaries, is computed at 730,000 tons, or 365,000 lasts. The grain stored in those warehouses is brought down the Vistula from the interior of Poland, principally by Jews, and the boats which convey it are from one to three months on the voyage. These vessels are rudely constructed, and after the cargo is disposed of, they are sold for firewood, or formed into huts for the owners until a market is obtained. In conveying grain in these boats, there is no artificial covering as a protection from the weather; it is piled in the boats so as to present sloping sides like the roof of a house, and the surface thus exposed to the damp, soon begins to vegetate and form a thick matted covering, serving all the purposes of a tarpawling, and presenting the appearance of a verdant mound of earth, around which flocks of birds are seen to hover in the fearless pursuit of food. At Elbing, as well as at Dantzic, the warehouses are guarded during the night by ferocious dogs; and since no evil consequences ensue from this mode of pro-

* Barrow's Excursions, p. 111.

tecting property, it is to be wished that the Prussian practice were extended to those portions of the civilised world, where it might be applicable, as it would save men from the labour and degradation of nightly watching.

The preparation of *rosolio* is an important branch of distillation at Dantzic. It is an agreeable spirit, composed of the juice of the plant *ros solis*, brandy, sugar, cinnamon, cloves, nutmegs, and other ingredients, and is in great demand in the German states. The *rosolio* of Dantzic is chiefly prepared from honey, blanched by exposure to frost, and afterwards washed with spirits. The honey thus prepared is hard and white as snow: the Italian rosolio is made by a nearly similar operation, and for which there are several distilleries at Leghorn. The people of Dantzic say, that the honey employed is procured from the forests of Kowno on the river Niemen, and its properties are principally attributable to the honey collected by the bees, which feed on the blossoms of the lime-trees in those forests. In Moldavia and the Ukraine, the Jews have a method of making honey into a hard and white sugar, which is employed by the distillers of Dantzic in the manufacture of liqueurs. This process consists in exposing the honey to the frost during three weeks, sheltered from the sun and snow, in a vase of some material, which is a bad conductor of caloric. The honey does not freeze, and ultimately becomes transparent and hard as sugar. Rosolio is considered serviceable for paralysis and other disorders. Various seeds and aromatics are used by the distillers of that city, perhaps more than elsewhere for flavouring spirits. Kümmel, their favourite flavour, is that of the cumin, *(Cuminum Cyminium)* an annual indigenous plant of Egypt, but caraway or fennel *(fæniculum)* seeds, are generally mixed with cumin, and sometimes substituted for it, in the distillation of *Kümmelwasser*. Coriander seed, as well as *Calamus aromaticus*, (the *acorus* of botanists)* is also employed by the distillers of Dantzic, to correct the empyreumatic odour of spirits, and give a grateful and palatable aroma to the liquors with which they are incorporated.

Formerly a strong medicinal beer was made in Dantzic from the berries of the sweet-brier, which was found both salutary and agreeable; another description of liquor, called *black beer*, is made in that city and held in considerable estimation: it is a species of spruce beer, and is made in a manner similar to that practised in Canada.

Distilleries are numerous in Dantzic; many work from grain,

* This is an odoriferous reed brought originally from India, but now found in the North of Europe and in North America.

others from molasses, and several from various saccharine materials. The stills are, for the most part, made of wood, steam being the chief agent; others are worked in the usual manner. In many, the machinery is curious, simple, and efficient.

The exports of corn-brandy from Dantzic in 1802, amounted to 1,098 ohms; and in 1804, to 14,312 florins and 276 ohms. The imports of rum and French brandy in 1803, were 1,412 hogsheads; and in 1804, 1,383 ohms. Through the other principal ports of Prussia in 1804, 1,224 hogsheads of brandy were received.*

The excise raised on mead, malt, beer, wine, and spirituous liquors in the Polish part of Prussia is of some importance, but in no degree equal to the means they might possess of extending it. In the management of the distillery, the Prussians have not hitherto shown much skill. Most of their concerns are poor and ill adapted to the work. At Pillau, Elbing, Königsberg, &c., the stills wrought some years since, were oblong squares of copper, generally about ten feet in length, three feet in width, and three feet in depth. Wood is the common fuel, though coal is plentiful, particularly in Silesia, and peat may be procured in some of the states in abundance. But as a too intimate acquaintance with the luxuries of life seldom contributes to the felicity of the human race, it is, perhaps, fortunate for these people that the great bulk of their agricultural produce is exported in the raw rather than in the refined state.

In the eastern part of Prussia, as no wine is made, the common beverage is beer or spirits from corn. The establishments for brewing and distilling are consequently numerous, but some of them approach in magnitude to those of England. The whole quantity of beer that is brewed is 4,243,000 *fass*, or casks of 50 gallons each. The consumption of corn-brandy is, on an average, 8,000,000 gallons annually.

In Berlin, there is a description of malt drink called *White Beer*, made from a mixture of wheat and barley malted in the ratio of five parts, (3.83 quarters) of the former to 0.76 quarters of the latter, with about nine barrels of liquor at the temperature of 95°. The wheaten malt is considered requisite for the sake of the flavour and colour. This mixture is mashed for about thirty minutes, during which five or six barrels of liquor nearly boiling are conveyed from the copper into the tun, after which the mashing is kept up for fifteen minutes longer; the heat of the mash being at 126°. In an hour after, fifteen pounds of hops, mixed with two barrels of worts taken from the top of the kieve, are boiled in the copper for a quarter of an hour, during which four barrels more of worts are added, making in all six barrels in the

* Oddy on European Commerce, 4to. Vide Addenda.

copper. The whole, with the exception of a barrel left to keep the bottom from burning, is returned to the kieve at a heat of 201°, and after a few minutes' mashing is allowed to stand half an hour, the heat at this period being 153°. Six barrels more from the top of the kieve are now put into the copper and raised to a heat of 205° ; the contents of both copper and kieve, grains included, are then thrown into a vessel called a *tap-tun* having a false bottom covered with straw, the temperature being then 167°. Having remained undisturbed in this vessel about fifteen minutes, the cock between the real and false bottom is opened, but in so small a degree in order to render the liquor the finer, that it requires seven hours to draw it off. At this stage, six barrels of liquor are added and the whole is pumped into the coolers, from which it is sent to the fermenting tun at a heat of 72°, when a gallon of yeast is added and in two hours fermentation commences. In the space of eight or ten hours it is put into casks and delivered to the traders, with whom the fermentation is finished generally in three days ; on the fifth it is bunged, is bottled on the ninth, and is drinkable on the fourteenth or fifteenth day. By this practice the manufacturer is a dependent for a supply of barm, either on his own or the customers of other brewers.

From the proportion and quantity of grain stated, 18½ barrels of beer are usually obtained ; this drink seldom requires fining, is well flavoured, and will keep for six months.

Between Dresden and Meissen, the vineyards which adorn the banks of the Elbe are the property of the king, and the wine which they yield is in higher estimation than any other in his dominions. In the whole of Prussia, it is estimated that there are 36,908 acres employed in vineyards. Hops are raised in Brandenburgh, Pomerania, Silesia, West Prussia, Saxony, and on the Rhine, in sufficient quantities to supply the inhabitants within the kingdom : the average quantity produced is annually about 550,000 bushels, which are sold by measure. The wines are calculated to be from 390,000 to 420,000 eimers ; an eimer being fifteen gallons. In Brunswick, there are eighty or ninety breweries of mum and beer, with about thirty-two distilleries from corn. In Königslutter, there are nine distilleries of ardent spirits. In Magdeburgh and Genthin are distilleries and breweries. In Berlin, within the walls, are one hundred and forty-three distilleries and forty-two breweries.

In Wurzen and Potsdam, there are considerable breweries which engage a great number of the inhabitants. The vineyards about Lutzen in Saxony, although affording abundance of grapes, yield but an indifferent description of wine ; and, therefore, it is more profitably applied

in making vinegar and brandy. At Weimar, breweries and distilleries are chiefly employed to supply the city, though there is a great trade in corn. In Saxe-Gotha, aniseseed and cumminseed are raised o considerable extent and converted into essential oil, which is in great demand for the flavouring of spirits.

In Silesia, ale-houses are numerous, and no postillion drives a stage without stopping to enjoy a *schnap*—an irresistible temptation, since every ale-house hangs out a board with the seductive salutation, "*Willkommer mein Freund*"—Welcome, my Friend!

In the neighbourhood of Hirschberg, there is a spring so impregnated with oxygen, that the common people crowd to it on Sundays to intoxicate themselves cheaply.

In Germany, honey is an abundant production. The number of bee-hives in Prussia alone, are estimated at 521,000, and the sales of the honey bring yearly about £356,091.

It was customary among the superior class of the Teutones, (an ancient people of Germany) to drink mead for a period of thirty days after marriage. From this practice is probably derived the familiar expression, "*to spend the honeymoon.*" Hence mead may be classed amongst the most ancient and favourite beverages of the Germans, as proved by the testimony of Pytheas already noticed. Next in antiquity is the beer described by Tacitus; but it is highly probable that cider may dispute the precedency, as Tatian, a writer of the second century, makes frequent allusion to it as a common drink among the Helvetians.

Throughout Poland, all the distilleries are farmed exclusively to the Jews by the nobles, who receive large sums for granting this privilege. One nobleman has been known to receive £3000 annually for leave to distil on one of the largest of his estates. The liquors manufactured by them are corn spirits usually drunk without water. The wash, previous to the distillation, is mixed with the essential oils of fennel and caraway seeds, to render the spirits more palatable, and of which enormous quantities are consumed to the real injury of the morals of the people. This led Joseph II., when he obtained possession of Galitzia, to prohibit the Jews from either pruning the vines or distilling spirits; but these regulations were disregarded after his death, and the Jews are now sole masters of this branch of commerce. Every traveller in Poland must lament the drunkenness of the peasantry, particularly as it is effected by the avarice of the nobles, since according to the excesses of the people, the larger are the returns to the lords of the soil.*

* Neale's Travels through Germany, Poland, Moldavia, and Turkey.

The present Farmer-General (1837) is M. Steinzler, a banker at Warsaw, who has purchased a lease of the liquors for twenty years, for which he paid 7,600,000 florins, or £182,400 sterling; therefore the same monoply is to be continued for the aggrandisement of an individual, to the degradation of the community.

The cheap whiskey of the country is drunk by the Polish peasantry in enormous quantities, whenever they can obtain it. "I was informed," says Jacob, "and had reason to credit the accounts, that when the peasants brought to the market-towns their trifling quantities of produce, a part of the money was first used to purchase salt, and the rest spent in whiskey, in a state of intoxication that commonly endured till the exhaustion of the purse had restored them to sobriety."*

There is no duty on the spirits sold in the country portions of Poland; and the supply of that commodity, in a populous neighbourhood, affords a profit, unequal, however, to the interest of the capital invested in the soil, the farming stock, utensils, and other requisites, added to the expense of erecting the distillery. The spirit from corn is sold in the country at ten-pence per gallon; but on paying a high duty, or being a subject of monopoly farmed by the government to distillers, on the entrance of the cities and towns, it is retailed in them from three shillings, to three shillings and six-pence per gallon. The duty on beer is collected by the brewers to whom it is farmed by the government.

In Lithuania, spirits are consumed to a considerable extent. Travellers say, that every town on the road sells spirits, and that the lower orders are seen to stop and take their *schnaps;* even women carry a private bottle, and when they meet, apply it to each other's mouths, and separate after a reciprocation of kisses. When travelling on horseback, they do not forget their favourite beverage, and observe the same ceremonies in drinking as when on foot.

When Buonaparte had control over Poland, he encouraged the culture of white beet in order to obtain sugar with a view to injure the British trade in that article; but the experiment was of short duration, as it is not now cultivated for such a purpose.

The propagation of bees is an object of great attention with the Poles, and their honey is classed under three heads, namely, *lipiec, leszny, stepowey prasznymird,* each of which deserves particular notice. Lipiec honey is the produce of bees that feed only on a species of lime-tree of the genus *talia,* called *kamienna lipsa,* or stone lime. It is held in high estimation on account of its efficacy in the cure of affections of the chest, particularly those connected with the lungs; it

* Report on the Trade in Corn, &c. of Northern Europe.

is peculiarly agreeable in flavour, white as chalk, has little wax, and is, therefore, easier of digestion: the forests of Kowno in Lithuania, are alone noted for this production. Such is the value set upon *lipiec*, that a pound of it has been known to sell for two ducats at the very place where it was collected. In the forests about Kowno there are no caps, the bees living in the hollows of trees excavated by the peasantry for that purpose. The hives are protected from the severity of the winter by a coating of clay and straw: every peasant is entitled as a right to that portion of the forest with the hives to which he has paid attention; and any infringement of this right, or a robbery of the honey, is punished by the extraordinary infliction of drawing the intestines of the culprit through the navel, and rolling them round one of the trees which he had despoiled of its treasure. Kosciusko, who was a Lithuanian by birth, was so partial to the mead termed *lipiec*, from the honey of that name, that, during his exile in Switzerland, he wrote to General Wawrzecki to procure him a supply from the manufactory at Kowno.

The *leszny* honey is the produce of bees that feed in the pine forests; and the *stepowey prasznymird*, or the honey procured solely from the field flowers, is considered excellent; and that from the Ukraine is accounted the best. The poor people there reckon more on the produce of bees than on that of grain; and it is not uncommon for some of the farmers to have from four to five hundred ule, or logs of wood in their bee enclosures, which are called *parsieka*, or bee-hives, in order to collect the honey. To accomplish this purpose, these logs, which are of birch and about six feet high, are hollowed in the middle and are about five feet in length, and one foot in width. The aperture is covered with boards, leaving only a small opening for the passage of the bees. An idea of the quantity of honey collected may be conceived, when it is known that one of these large cavities is often filled in a favourable season at the beginning of August. From this superabundance of honey in Poland, the common drink may readily be supposed to be mead; and this is manufactured to the utmost perfection. In the process, three parts of water are added to one of honey, and to 163 gallons of this mixture about 50lbs. of hops are added. This amalgamation is termed a *waar* or brewing. While the water is in a boiling state, the honey and the hops are stirred in it, till they become milk-warm: it is then put into a cask where it ferments for some days. The liquid is then conveyed into a cask in which whiskey had been kept, is bunged closely, and put into a cool cellar, and after lying three years in this state, it is considered to have arrived at a state of excellence and continues to improve by age.

The common mead is manufactured in the same way, except that a quantity of malt is added. In Hungary, ginger is used in the process; in Poland this is not customary, though many think it would make a better stomachic. *Wisniak*, *Dereniak*, and *Maleniak* are other descriptions of mead, with the addition of wild cherries, berries of the *cornus mascula*, and raspberries; and their spirituous qualities are such that they will keep for many years. The mead drawn from the *lipiec* honey is purely that obtained from the honey itself, mixed with a certain proportion of water and fermented in the usual way.

According to ancient Polish writers, bees were so superabundant in their time, that they not only filled the hollows of trees, but even the ground was covered with their cells. The Poles at one period, brewed hydromel to such an extent, that the workmen were frequently drowned in the huge vats employed in the manufacture. It was at one time a mark of Polish gallantry to take off a lady's shoe, and pass it round the table, filled with wine or hydromel as a bumper to her health.

A description of honey of an intoxicating nature, is collected in some parts of Poland. This honey is gathered by the bees, from the *azalea pontica*, chiefly at Oczakow and Potesia; and is solely used for medicinal purposes, no mead being manufactured from it, nor can it be eaten like other honey, as it produces nausea as well as inebriation. Before quitting the subject of honey in this quarter, it may be interesting to know that in the fourth and fifth centuries, it was a common practice to collect bees together by hissing, or whistling, in the same manner as was done by beating on brass; and it is still a practice in Lithuania and Russia, to lead bees to feed and gather them home by the blowing of a whistle, a surprising phenomenon in the history of these insects.

In a country so favoured by the beneficence of Providence, it is lamentable that many of these gifts should be converted to purposes disgraceful to the human character; and if it be true, as reported by a respectable writer, that the ministers of religion desecrate their high office, by vending spirits to the people as a source of emolument, what can be expected from the community when they find their teachers thus lend themselves to pander to their vices?

The Danes, among the other inhabitants of the North who drew from France a vast quantity of her brandies, at present distil from corn to a large extent. In 1800, the distillers of Copenhagen, amounting to 316, formed a corporate body; their consumption of grain in that year was 287,824 tons, which yielded 2,347,850 gallons of spirits. At Flensburg, two hundred stills are employed, the produce of which is

principally sent to Iceland and Norway. In the town and neighbourhood of Husum, in the Duchy of Schleswick, the manufacture of ardent spirits is prosecuted with much vigour. There, as well as in other parts of the Danish territory, the feeding of cattle on the refuse of the stills, forms a very profitable part of the trade. Denmark, Schleswick, and Holstein produce corn in such abundance, that the export in one year frequently amounts to £105,000.*

The average estimate of the spirits exported from Denmark, amounts in value to about 100,000 rix-dollars, or £22,500. The crown draws a large proportion of the national resources from the excise on this article, and from the licenses permitting its manufacture and sale. The wash used in the distilleries is principally made from malted barley and rye, but scarcely any oats are used: considerable quantities of the spirits are converted into cordials, and much drunk in the taverns and retail shops, in the form of drams termed *schnaps*.†

Besides the ardour with which the Danes prosecute the distillation of spirits,they make very good beer and ale. Beer is of great antiquity amongst them. The Scandinavian word *braga* (beer), is probably the primitive of our terms brag and braggart, the Scandinavians being great boasters over their cups. The Saxons and Danes were passionately fond of beer; and the drinking of it was considered one of the principal enjoyments of the heroes admitted into the hall of Odin. From the word *braga* may have been derived the appellation *braggot*, from *brag*, malt, and *gots*, a honey-comb, a species of drink common in Wales, made from malt, honey, and spices; and the word *bragwort*, the name of a weak kind of mead, may be referred to the same origin.

A considerable portion of the hops employed in the Danish breweries, is of the growth of the islands of Funen, Falster, Bornholm, and the peninsula of Jutland; but the consumption is so great that they annually import hops to the amount of 55,000 rix-dollars. As honey forms an important article in their domestic economy, and in the composition of their liqueurs, great attention is paid by the Danes to the culture of bees, over which the schoolmasters of the country have a peculiar superintendence, and mead is manufactured extensively.

At entertainments, the inhabitants do not usually indulge to excess in drinking; when a sufficient supply of wine or other liquors has been served, the host rises, and thanks his guests for doing him the

* For further particulars on the Trade of Denmark, see Addenda. Also Boetticher's Statistical Tables, No. 2.

† Clarke, vol. v. p. 41.

honor of dining or supping with him, or politely bows to them: the company then simultaneously rise, and bowing to the host and to each other, either depart or retire to another apartment to drink coffee.

From the king to the peasant, there is a simplicity and homeliness of manner amongst the Danes, which renders society agreeable. Their kings have been noted for encouraging this cordiality of feeling. In 1796, a colony of Dutchmen settled in the country, and the king was so pleased with their industrious habits, and so anxious to encourage them, that he, with his court, visited them once a year, dressed in the same style as the Dutch boors, and partook of a feast prepared of the simplest dishes. There the royal visiter, after the example of his ancestor Odin, quaffed the circling goblet of *braga* or beer, and spent the evening in temperate enjoyment.

The Danes furnish the island of Iceland with beer and ardent spirits, in exchange for dried fish and other commodities of that country. A considerable quantity of their liquors is transported thither, to afford the inhabitants of that chilly region the pleasures arising from those warm and exhilarating beverages. The following return of the imports of Iceland for one year, will serve as a specimen of the inebriating liquors consumed by the inhabitants:—viz. 569 barrels of Danish and 226½ barrels of French brandy, 47½ barrels of rum, 86½ hogsheads of wine, 53 barrels of mead, and 52½ barrels of beer.

In Iceland, from the coldness of the climate, neither grain nor fruits are cultivated, except a species of wild corn, which is dried in a *sofn*, or kiln, afterward ground by hand-mills made of lava, and the meal made either into bread or porridge, which the peasantry account delicious. During the usurpation of Cromwell, the Icelanders brewed their own ale *(bjor)*, and appear to have been very fond of it, as the term *drinking-house*, given to the place where they congregated to carouse, strongly implies. The English, at that period, exported thither large quantities of strong ale which was highly valued, and drunk with avidity.

According to Henderson, there were numerous mineral springs in Iceland, termed Olkelldar, or Ale-wells, from their taste and their inebriating effects when taken fasting; but which are now seldom used, having fallen into disrepute. In the island of Zealand, the inns have no sign over the door, except that of a ship, but are distinguished only by the proprietors' names. The taverns and inns are in general very good, but coffee-houses, such as those to be met with in France, England, and Germany, are nowhere to be found, the confectioners' shops serving as substitutes. In Copenhagen, which contains a population of above 106,000 inhabitants, industry and activity prevail;

but these virtues are, in some degree, counterbalanced by the propensity of the lower orders for spirituous liquors. The sale is extensive not only there, but also in the neighbouring towns. Elsinore has, on that account, been not unaptly called by sailors, "the Gin-shop": there all the British vessels lay in a stock of spirits, to serve them during their absence from England.*

In Norway, nature has so stinted her gifts as to oblige its inhabitants to depend on others partly for the necessaries, as well as for the luxuries of life. Norway annually imports 300,000 quarters of corn, of which Christiana alone imports from Denmark 100,000 barrels. In the northern districts, the grain for the most part is destroyed by incessant rains; and what remains is preserved in wooden sheds, heated by means of stoves, or dried by the winds on poles, fitted up for that purpose.† A practice somewhat similar is observed in many parts of Sweden, with this difference, that the shocks of corn are spread on wooden frames raised several feet from the ground.‡ The chief beverage known to the primitive inhabitants of Norway, is that which is drawn from the birch tree. The mode of procuring the juice is, by boring a hole in the trunk, and then stopping it with a cork, through which, when a quill open at both ends, is thrust, the juice passes at the rate of a large drop every second. Amidst the immense forests that darken the mountains of Norway, great quantities may be obtained in this way. The inhabitants manufacture it as follows:—To a given quantity of juice is added a proportion of sugar, mostly two pounds to every gallon. These are boiled together, until all the impurities rise to the top and are skimmed off. To the remainder, when properly cooled, is added a little yeast, to promote fermentation. About three or four days complete the whole of the process. In extracting the juice, it is found to run more freely when the tree is moderately shaken by the wind, than in still and warm weather: the tree suffers little, if the hole be stopped with a wooden peg. Not only from the birch tree can a liquor be drawn, which may be converted into a good drink, but also from the willow, the poplar, the sycamore, and the walnut, all of which, when fermented, yield a palatable and strong wine. Some of the better classes in Norway, in making birch-wine, employ several ingredients, such as lemons, sugar, and raisins. The liquor, when boiled, is set to cool, and when brought to a proper temperature, a little yeast is

* Jones's Narrative, vol. i. p. 56.

† Coxe's Travels.

‡ Acerbi's Travels, 2 vols. 4to.

added. It is then allowed to ferment. Some immediately barrel it and put some raisins and isinglass into the vessel, in order to clear it. As soon as the feculence is worked off, the liquor is bunged up and laid aside for use. In Norway, many of the houses are covered with birch-bark, as it possesses qualities to resist rain and the inclemency of the weather, for a number of years. From its containing a great quantity of inflammable matter, torches are made of this bark, cut into long narrow stripes, and twisted together. When dried, ground, mixed with meal, and boiled, it is given to swine: in years of scarcity, it is mixed with corn and baked and used for human food, while the twigs of the tree afford fodder for the horses. From the berries of the sloe an agreeable sort of wine is collected.

A distillery on a small scale was established in 1793, for the manufacture of brandy, but no account has been given of its success. Ale, to a considerable extent, is imported, and dealt out with freedom at weddings, christenings, and other entertainments. Ale and beer are now made in the country, but not to such extent as to prevent importation; they are, however, of inferior quality: native hops are employed, which Barrow says he saw growing luxuriantly in Norway. Malt drink was held in such estimation amongst the Norwegians, that we are told that King Abreck, of Hordoland, chose Gierheld to be his queen, because she excelled in the art of brewing. Very good ale is brewed in the families of gentlemen for domestic use; but in many districts, it has a tartness, caused by the mixture of oats with bere. For stronger drink the Norwegians depend on the Danes, Dutch, and French, who carry on a profitable trade with the country. So far back as the thirteenth century, a company of merchants settled at Bergen, who imported various articles of commerce, amongst which were malt, ale, wine, and spirituous liquors. At present the Dutch carry on a great trade with the Norwegians in this way, and in return for their gin, in particular, receive large supplies of juniper-berries. The Swedes also furnish them with corn-brandy, but in small quantities; what they manufacture themselves, Barrow affirms, is purer than that of Sweden. This spirit they distil from barley, and occasionally from rye and oats; it is generally flavoured, sometimes with anise-seed, and sometimes with caraway seed: others say, this is effected by the flowers of some mountain plants or by the juniper berry, with the addition of a little sugar. Dr. Clarke attributes the flavour to the infusion of the haeg-berry, or bird-cherry, *(prunus padus)* the juice of which is red; the spirit, however, is clear, but if distilled on the plant, it is thought the flavour might be retained, while the colour would disappear. Since the introduction of the potato,

and the attention paid to its cultivation, the Norwegians distil from it to a considerable extent. Laing, in his Journal, thus describes the process, as carried on in a small concern which he visited at Drontheim: The potatoes are first steamed, and afterwards bruised between two cylinders, the pulp is then run into vats, with a small proportion of ground malt; to every eight barrels of potatoes, 72lbs. of malt are used: the fermentation produced by a mixture of yeast is generally finished in three days, after which distillation is carried on in the usual manner. The produce varies in proportion to the quality of the potatoes. Every farmer is entitled to distil the produce of his own farm, but pays a trifling license if he buys the potatoes and works as a trader. A still is commonly kept on every farm, not only on account of the spirits, the consumption of which in every family is very great, but for the refuse or wash for the support of the cattle. The spirit is generally flavoured like the corn brandy with aniseseed; it is strong and fiery, but neither harsh nor ill tasted. There is commonly one brewing and distillation every week, or at least every fortnight, the operations of which are conducted by the women. The process of steaming the potatoes is effected much in the same manner as already described when treating of Germany: they are put into a barrel with iron hoops, having a small door in the side at its bottom, which is bored with holes to let out the water; the barrel is usually placed on a stand with rollers for the purpose of conveying it from one part of the concern to another; the steam is conveyed into this barrel by a pipe connected with the head of the still or boiler, and enters the barrel near the bottom through a grating: the condensed steam falls through the holes in the bottom. The operation of steaming is commonly finished in an hour and half; and the potatoes are considered sufficiently prepared for the purposes required, when they are fit to be eaten. By boiling the potatoes in steam, the flavour is said to be improved, and it prevents the spirits from partaking of the flavour of the potato; it is thought to be more profitable to distil them with a mixture of ground wheat and malt, rye, or any other kind of grain, than to distil the potatoes by themselves: the best proportions for this mixture are considered to be—to six heaped barrels of potatoes, weighing 78 stones of 16lbs. each, $9\frac{1}{2}$ stones of wheat or other corn, and five of malt from bere or bigg, are to be added. If other proportions be taken, the wort or wash is apt to become so heavy as to be liable to burn or singe in the still, and by observing these ratios, any quantity, great or small, may be made with certain and good effect. The ground grain and malt are first mixed with about 120 quarts of water, heated to 50° of Reaumer, or 144° of

Fahrenheit and no higher; the bruised potatoes are then shovelled into the vat, after which about 450 quarts of boiling water are poured in, and again cooled down with cold water to 20° of Reaumer or 77° of Fahrenheit. The mixture of grain and malt is then thrown in, a little yeast being added; the vat is then closed up and left to ferment: to ascertain when it is fit for the still, the rule is to divide the scum of seeds and froth upon its surface, and if the scum does not run together of itself, nor the opening close with air-bubbles from below, the fermentation is over. The quantity of potatoes and grain above-mentioned has been estimated to yield from 160 to 190 quarts of strong spirits. The distillation of spirits being unrestricted in Norway and practised in every farm-house, renders the price very low, usually about 14d. per gallon. Barrow states, that although corn-brandy is plentiful and cheap, being only from 4d. to 6d. the quart bottle, and that great quantities are consumed, yet drunkenness is a vice not common among the Norwegians.* This is the more singular, since, according to Laing, they have the wines and brandies of France and Spain cheaper than the people of those countries, owing to the expenses of land carriage and municipal taxes.

Although in Sweden, grain is cultivated to some extent, yet there are but few distilleries in that kingdom. It is curious that among these few should be ranked the palace near Abo, formerly the frequent residence of the Swedish monarchs, and that of Calmar, in the province of Smaland, once the habitation of the celebrated Margaret.

In 1772, Gustavus III. declared his determination to make the distillation of brandy, for the sake of its revenue, a royal monopoly. To effect this, he prohibited private stills, previous to which every farmer was at liberty to distil from corn, or any other substance he pleased. This measure rendered the monarch very unpopular; and he was obliged to have recourse to force to suppress the insurrections it occasioned. During three years, he persevered in this monopoly; but in 1775, he rescinded the prohibition, so far as to grant the privilege of distillation to a limited number of individuals on the payment of a certain sum for a fixed number of years. The want of a sufficient number of farmers or contractors of this royal monopoly, forced the king to abandon his plan; and he became himself the only distiller in the kingdom. A dignitary of the church remonstrated with his Majesty on this occasion, and remarked that there were two things with which a prudent king should not meddle, namely, religion and brandy. With the concerns of the first, Gustavus had little to do; but the second he pursued with ardour: he even interdicted the

* Barrow's Excursions, p. 227.

importation of foreign brandies, and levied heavy penalties on the slightest infringement of any of his regulations, which occasioned numerous complaints, remonstrances, and menaces, in every part of the kingdom; and discontent rose so high, that even in the metropolis, it was found necessary to station guards at the Royal Brandy Factories, to prevent their destruction by an indignant populace. This expression of public feeling led to a modification of the laws; but the power of the crown is still predominant.

In 1793, a large distillery was erected near Gripsholm, within about 25 miles of the capital. It was calculated to work annually about 1,200 Riga lasts of grain, or 18,000 tons. A term of twenty years was given to the proprietors for working it, after which it was to become a royal monopoly. In that distillery there were 96 vats of equal size, in each of which was usually mixed four tons and a quarter of flour, two thousand canns of water, and ten canns of common yeast. Each vat yielded from 80 to 84 canns, and sometimes 90 according to the grain: the mixture was stirred at intervals, until fermentation took place, when the vats were covered and luted down with a composition of lime. In four days the wash was ready for the still. The number of stills amounted to twenty-six, four of which contained 4,000 canns, the others 2,000. The process was slow, from six to seven hours being employed in bringing over the wash, and a proportionate time for the spirits. One-fourth part of the grain used was barley, and as each ton yielded twenty-two canns of spirit, the crown exacted twelve of these, at a strength six degrees above proof. The remaining ten fell to the proprietors, which they sold at sixteen shillings and four runsticks per cann, making upon 18,000 tons, 180,000 canns; on the whole produce nearly 400,000. There were ninety-six workmen employed, at about fourteen or sixteen plottes per month.

Grain is not the only ingredient used in the Swedish distilleries. A large species of black ant, which affords on distillation a resin, an oil, and an acid, is employed with rye to give flavour and potency to the brandy. This insect is commonly found on small round hills at the bottom of the fir tree. It is, says Consett, less a matter of surprise that they should use these insects in their distilleries than that they should eat them, and consider them highly palatable and pleasant. "As I was walking," he remarks, "with a young gentleman in a wood near Gottenburg, I observed him sit down upon one of those living hills, which from the nature of its inhabitants, I should rather have avoided, and begin with some degree of keenness to devour these insects, first nipping off their heads and wings; the flavour he declared

was of the finest acid, rather resembling that of lemon. My young friend entreated me much to follow his example, but I could not overcome the antipathy which I felt to such kind of food."* Chemists have tried the distilling of ants, and have obtained an acid resembling vinegar; its properties and attractions are not yet distinctly determined.

The propensity of the Swedes for strong drink of all kinds is well known, and their wish to refine upon this luxury may have led them to adopt the ant as the Dutch have the juniper. To their constant use of spirits, Fortia attributes the thinness of the population. Several attempts have been made to restrain them in the exercise of so fatal an indulgence, but to no purpose.† They allege that the practice of drinking is conducive to health, and even the most temperate adhere to the custom of taking an allowance both morning and evening.‡ At their dinner parties, which in general are given with great ceremony, the company assemble in an adjoining room, where a sideboard or table is spread with bread, butter, cheese, pickled salmon, and corn-brandy. To these, says Thompson, who on one occasion met fifty persons at a private house, the company pay a visit, and each takes a dram by way of whet to his appetite.§ Clarke, however, asserts, that he had never seen a drunken mob in Sweden upon the Sabbath day, nor drunkenness on any day among the peasants. If intoxication prevail in that country, it will be found perhaps in the better classes of society.

Where the lower orders use beer as a common drink, breweries may be expected to abound. In 1809, there were 159 registered establishments of that kind in the country. Some years previous to that period, they were enabled to export 232 barrels from Stockholm, and in 1790 they shipped off 169 barrels. When Thompson, who lately travelled in Sweden, visited Gottenburg, a Mr. Lorent was erecting a brewery for porter, to enable him to imitate that of London, which he sold at the inns for two shillings and six-pence the bottle. This brewery succeeded so well, that in 1826 its porter was of such good quality, and came so near to that of London, that it was jocularly said, "they got their water from the Thames." The porter of this house is in demand throughout Sweden, and has, in a great measure, superseded the necessity of any importation from England. The concern is now kept under the firm of Lorent and Nooning, who, it

* Vide Consett's Remarks in a Tour through Sweden, &c.

† Fortia's Travels.

‡ Clarke's Travels, vol. v. p. 135.

§ Thompson's Travels in Sweden, 4to. pp. 12 & 13.

is said, have embarked therein a capital of £50,000. Great encouragement is given by the Swedish government to the consumption of porter in preference to that of ardent spirits, the use of which has been attempted to be restrained by every means that could well be devised; even those who keep post-horses or vehicles for hire are prohibited from selling spirits, or any matter which might afford an excuse for an indulgence in the use of ardent spirits. Could the pernicious practice of taking schnaps or drams, which is too prevalent, be restrained, it would have a powerful effect in reforming the habits and curbing the propensities of the lower classes from those irregularities into which they too frequently fall. Although the vice is generally condemned, yet those who are often busy in its condemnation, render themselves frequently reprehensible in this respect. An anecdote proving the truth of this observation is related of a young man, who being intoxicated, met two sober young friends that reproached him for his intemperance; but the moralists had a short-lived triumph, for in the evening of the same day, when he had become sober, he met his admonishers reeling along as drunk as Bacchus. "What!" said he, as he stood eying them with a look of pity and contempt, "are these the persons that reproved me this morning for an irregularity into which they themselves have so grossly fallen in the evening?"

The good old practice of domestic brewing is still followed in Sweden, and the beer is represented as sweet and wholesome. In the year 1797, there were fifty breweries and forty-seven vintners in Stockholm. Regnard describes a drink which he met with in that city, termed *calchat*, consisting of beer, wine, and sugar. Formerly it was customary in Sweden to drink healths out of goblets of a size proportioned to the rank or respectability of the person whose health was proposed, so that a goblet to the health of a king was as much, if not more, than could be taken as a bumper. At entertainments in some parts of Sweden, a beverage is used termed *bishop*, which consists of a mixture of Burgundy, Claret, Sugar, Spices, and Seville Oranges. At Stockholm, every description of luxury is to be found which is common in Europe, and although the manufactures are insufficient for the supply of the country, the deficiency is made up by importation, a view of which may be seen in a Table of the Addenda.

As agriculture in Sweden has been carefully attended to, much of the sterility of the soil has been overcome, and the land, in many places, rendered tolerably productive. Oats, barley, rye, and wheat are cultivated, but not in sufficient quantity for home consumption, since it has been calculated that upwards of 300,000 tons of grain

are yearly imported. In the north of the kingdom, there are neither apples, pears, plums, cherries, nor any kind of fruit cultivated; but nature has been bountiful in bestowing on it a profusion of wild fruit; of these there are six species of raspberry, three of currants, four of whortle berries, and a peculiar sort of wild gooseberry.

In order to save grain, which is sometimes so scarce and dear in that country, it was proposed in 1747, by Mr. Charles Skytes, to distil brandy from potatoes. The experiment was tried, and it was found that an acre of potatoes compared with an acre of barley, would yield a spirit in the proportion of 566 to 156, even admitting the potato to grow in the worst kind of ground, and the barley in the best. It has been ascertained by Dr. Anderson, that 72lbs. of potatoes, when properly fermented, will produce one English gallon of pure spirit, considerably above proof, with an additional quart something below proof. This liquor has been found to possess qualities of the best description both in taste and flavour. The annual duty on the spirits distilled in the country, has seldom exceeded £41,541. Besides the use to which potatoes have been converted by the Swedes in the distillation of spirits, they have extracted sugar from them, and the apples of this vegetable, when ripe, ferment and yield vinegar by exposure to the atmosphere.

At Upsala, there are public cellars like the tap-rooms in England, where beer, brandy, and wine are obtained in great abundance. The beer is made at Stockholm, the brandy is highly flavoured with anise-seed, and when mixed with water, it appears as white as if milk had been mingled with it. These cellars are often the arena of revelry and drunkenness, in which, according to Clarke, the students spend more of their time than is favourable either to the practice of morality, or the pursuits of literature. There is such a rage for the use of anise-seed in Sweden, that they mix it with bread and drink. The bread, which is generally made of rye, is so full of it, that both it and their brandy are, at first, unpalatable to strangers. The Swedes are as partial to this plant, as the Chinese are to the use of the *illicium anisatum* for seasoning dishes; and the Japanese also display such a love for it, that they have garlands of it in their temples, before their idols, and on the tombs of their friends, besides using its powdered bark, as an incense to their gods. Linnæus himself has left a memorial of the national partiality for this plant, by naming it *illicium*, which signifies an allurement. Great quantities of the seed are used at the brandy distilleries of Helsingberg; and although some dilute this liquor with water, it is the common practice to drink it raw, not only in Sweden, but throughout Norway and Russia.

All the post-houses on the mountainous passes in Sweden and Norway are tax free, and they have the privilege of selling corn-brandy for the accommodation of travellers. Spruce beer is a beverage much in use among the Swedes. It is said to have originated from the salutary effects produced by boiling the tops of the spruce fir, and giving the liquid to the soldiers employed against the Russians, during a war with that people, and at a time when the scurvy had made great ravages. The recovery of the army was on this occasion so miraculous, that the Swedes ever after continued to call this fir, the *scorbutic tree.*

From the fruit of the *rubus arcticus*, a most delicious wine is procured, the use of which is confined to the nobility in Sweden; and the Swedes make an agreeable liqueur, resembling lemonade, from the berries of the *rubus chamæmorus.*

Among the Swedish imports, English porter is still an estimable commodity, notwithstanding the prosperity of the native breweries. The privilege of importing this liquor is confined to Gottenburg, and the consumption of it is great, on account of the number of hands employed in the fishery and oil trade. Brandy, however, is the favourite beverage, and the custom of using it before breakfast and dinner, is as much a characteristic of a Scandinavian or of a Russian, as the ceremonious gifts of tobacco and coffee are of a Turk or of an Arabian. Strangers in Sweden are subject to many diseases, which never attack the natives; and if you ask how they escape these disorders, they answer that they preserve their health by drinking brandy, morning and evening. But they do not confine the drinking of brandy to these two periods of the day, for the dram bottle is ever at hand, even in the king's palace; and there are fourteen different stages in the day's dram-drinking, each having a distinct name, but it is expected that the Crown Prince, who is favourable to Temperance Societies, will bring about a reformation in this degrading habit.

The population of Sweden, in 1830, was 2,904,538, of whom the half may be considered consumers of brandy. These may be divided into three classes, according to the number of drams taken daily :— viz.

			Canns.
½ million	take 5 drams daily,	or 60 canns yearly,	30,000,000.
... .	3	36	18,000,000.
... .	2	24	12,000,000.

The cann is valued at a rix-dollar, or one English shilling, which gives an amount of 60,000,000 rix-dollars spent on brandy.

The following is a return of the number of pans employed, with the amount of canns of brandy manufactured in Sweden, during the years specified: viz.

	Pans.	Canns.
1825	172,346	3,651,210
1826	172,586	3,583,253
1827	162,733	3,362,562
1828	169,744	3,483,856
1829	173,126	3,542,956

The quantities of foreign spirits imported during the following years, were—

	Canns.	Rix-dollars.
1826	80,143	value 130,901
1827	94,720	151,127
1828	89,038	153,901
1829	119,835	206,470
1830	141,998	236,737
1831	129,115	271,066
1832	190,570	388,716
1833	169,312	345,402
1834	151,576	301,249

For a view of the importation of wine, together with the quantities of malt-liquors exported, the reader is referred to the Addenda.

The cann is computed to hold 30 drams; and 100 canns are equal to 69½ English wine-gallons.

The number of pans has been reduced to about 150,000, which is mainly owing to the exertions of the Temperance Society; but unfortunately the imports show that the efforts of this Society are, as yet, but limited. The brandy-pans, as they are termed, are of various sizes: some are only large enough to make four canns, while others can make ninety and upwards. However writers may be divided with regard to the character of the Swedes, on the whole it may be affirmed, that no person of fine feelings and warm fancy can, without regret, quit a country so remarkable for its picturesque scenery and the hospitality of its inhabitants.

In Lapland, a large portion of which is subject to Sweden, scarcity is sometimes so great that the inhabitants are compelled to feed upon the bark of trees: yet, amidst this desolate region, a late traveller ascribes the only evils with which the people are beset to the habitual

use of brandy.* Their love for this liquor is such, that they have been known to give a crown for a glass,† and to exchange one of their best rein-deer for six drams of the common Swedish spirit.‡ They regard their passion for it as a misfortune, but when remonstrance is made on the subject, they say that without brandy they could have no wives. This unhappily is too true, for when a young Laplander wishes to choose a wife, he must first furnish a friend with some bottles of brandy, to mediate between him and her father, who is disposed to permit the visits of the lover only in proportion to the brandy he brings.

This perquisite too often induces a parent to postpone the nuptials of a daughter for two or three years. From the pleasure it gives in this world, they consider a little of it necessary for comfort in the next, hence they put into the coffin of a deceased friend a flask of brandy with other articles, in order that he may cheer himself on his journey.§

In a country where the winters are so rigorous and the cold so intense, it need scarcely seem surprising, that an ignorant and savage people should have recourse to strong liquors, to enliven the solitude of their rocks and mountains, and to give a brisker flow to their spirits. It is a ceremony not unworthy of relation, that when a Laplander has laid hold of the glass or mug, out of which he is about to drink, he first dips his forefinger into the liquor, rubs a little of it to his forehead, then on his bosom, and with the celerity of lightning, empties the contents into his stomach. These innocent people think that those precautions prevent the ardour of the spirits from injuring either head or heart.‖ Their chief supply of brandy is drawn from the border fairs of Norway, Sweden, Muscovy, and Finland. To these places they generally resort in caravans, or companies, travelling in sledges drawn by the rein-deer, and their furs, baskets, cheese made of rein-deers' milk, dried fish, toys, and the deer itself, for their favourite liquor, and for such necessaries as they may want. Whole families go to market in this way, and seldom return without experiencing some of the fatal consequences of too great an indulgence in their passion for strong liquors.

Lapland abounds with the *rubus chamæmorus*, or, as it is called cloud-berry, from being found on the tops of mountains, the fruit of

* Vide Clarke's Travels, vol. v. p. 404. † Ehrenmalm.

‡ Clarke's Travels, vol. v. p. 425.

§ Ibid. vol. v. p. 404.

‖ Thompson's Travels in Sweden, p .343.

which is about the size of a good hazel-nut; it is of a scarlet colour at first, but as it ripens, becomes yellow: when eaten with sugar or cream, it is cooling and delicious, being full of saccharine matter and strongly subject to fermentation; it is singular that no intoxicating beverage has been made from it, either by distillation or otherwise, and particularly amongst a people whose propensity for strong drink is so ungovernable. Of this fruit, great quantities are sent annually from the gulph of Bothnia to Stockholm; it is used in sausages and in making vinegar, and Clarke praises its medicinal virtues in cases of debility.* The Laplanders are so passionately attached to spirituous liquors, that they will kiss the ground in obeisance to any one from whom they hope to obtain this liquor, and exclaim, "Auna, Auna, minule vina," give me, give me, a little wine! "Addi mungi vedni!" give me some brandy wine! A few years ago, for six drams of common Swedish brandy, a Laplander would press the acceptance of one of his best rein-deer, and deem it an affront if this remuneration were declined.

Linnæus, in his tour through Lapland, states, that he taught the natives to make a beverage from the tops of the fir, which it is likely was the same as our spruce beer, and shewed them how to render the sap of the birch valuable as an agreeable drink. The Laplanders use the bark of the birch dipped in train oil as a celery.

A few of the wealthy Laplanders brew beer from grain. At marriages, brandy is freely circulated, and when the bridegroom demands the rein-deer, the promised portion of his wife, if he neglect to bring brandy with him, he is generally disappointed of the expected dowry. It is a prevailing custom in Lapland to make love through the medium of brandy, and a marriage is never concluded without drinking several bottles of spirits; the warmth of a lover's attachment is estimated by the quantity of spirits he distributes; a particular name is given to the spirituous liquor thus brought by the lover to the habitation of his mistress, and that is *soubbouvin*, or the lover's wine. At the funerals of the Laplanders, spirits are sprinkled over the place of interment; all the mourners drink of it, the rein-deer employed in carrying the deceased to the grave are, three days after, slaughtered to make a feast for the mourners, at which repast the *paligavin*, or fortune liquor, is drunk in honor of the deceased, whom they think is happy.† Such is the Laplanders' attachment to brandy, that lying-in women are accustomed to drink it, seasoned

* Clarke's Travels, vol. ix. p. 371–2.

† Regnard's Journey to Lapland.

with pepper, partly for the sake of its intoxicating quality, by way of narcotic, and partly to hasten and ease the pains of labour. The mothers even pour it down the throats of infants, and at all their christenings and funerals, intoxication prevails, the ceremonies of rejoicing and mourning being made mere pretexts for dram-drinking. At feasts, says Malte-Brun, they seldom depart before the whole repast is consumed The puolem-vine, or brandy brought from Flensburg, circulated freely, and mirth is evinced in noisy loquacity. All the guests thunder the wild discord of their *jolias*, or national songs, and the amusement is sometimes varied by cards made from the bark of trees, and coloured with the blood of the rein-deer. The Laplanders, when inflamed with liquor, never commit any acts of cruelty, shewing only an elevation of spirits which prompts them to shout, jump, and laugh, craving drams with hysteric screams, till they drop on the ground in total disregard of all that belongs to them, offering every thing they possess for brandy. When sober, they are as gentle as lambs, and of the most placable disposition. Like the gipsies, they practise several modes of divination, one is by inspecting a *cup of liquor* ; and which, to ensure the greatest possible certainty, must be a *cup of brandy*, which at once explains and ensures the whole business of the propheey, evincing that the love of strong drink, even on such occasions, predominates over the love of money.

Notwithstanding the love which the Laplanders display for intoxicating liquors, and the consequent mental imbecility which the use of these liquors produces, yet several of this nation have manifested talents of no ordinary description. Schober and Weber give an account of a Laplander who was gifted with uncommon memory and facility in the acquisition of languages ; but his inordinate desire for spirits unfortunately proved his ruin. This person was early taken from his native land, and educated in Sweden under the auspices of Charles XI. He was afterwards sent to Lapland to preach the gospel to his countrymen, having previously qualified himself in theology. After labouring about half a year in this pious undertaking, he got weary of the employment, and, mounted on a rein-deer, he entered Stockholm in the dress of a Lapland peasant ; there he remained for a short time, collected some money, which he spent in brandy, and then repaired to Copenhagen. In that city, he represented himself to be a Lapland prince, was admitted to the presence of the king, and afforded much amusement to the courtiers by his singular exploits in drinking. Under the same title, he visited the principal courts of Germany, following the customary course of inebriety. He visited France, learned the language of that country in a

month, and after receiving presents from Louis XIV., proceeded through Germany and Poland, to St. Petersburgh, where he had been only six weeks, when he was able to express himself with clearness and fluency in the Russian language, even so as to preach before the emperor, with whom he became so great a favourite, that he settled on him an annuity of 250 rubles. He then repaired to Astracan, and in a short time became master of the Tartarian language. In one of his drunken moments, while lying in a street, he was seized by some Calmucks, carried into the country, and presented to the Khan. His head was shaved, his person dressed in the costume of the people, and himself provided with two wives. In the course of a month he could converse familiarly with the inhabitants; but although he was treated with the greatest kindness and familiarity, he took the earliest opportunity of escaping to Astracan, where he studied the Persian, the Mongul, and the modern Greek languages. But before he could further shift the scene of his eventful life, his dissipation put a period to his existence.

The taste and habits of the Finns are little better than those of their Lapland neighbours, for without tobacco, beer, and brandy they consider life to be joyless. Old and young possess the same propensity, and although little acquainted with bodily debility, their excessive use of inflammatory liquors undermines their physical vigour, and often renders them disgusting objects of intemperance and folly.

The desire to obtain tobacco and brandy often induces the Finns to undertake incredible journeys; both men and women would sooner eat their provisions raw, and even starve, rather than be deprived of those luxuries. It is related of one, that having travelled from a great distance to Abo to purchase an iron pot, he observed some brandy and tobacco in a shop for sale; and such was his infatuation, that he spent all he had in their purchase, and returned home without the utensil for which he had undergone such fatigue.

When the people repair to the great fair at Abo, they immediately have recourse to their favourite liquor, and in this weakness they are indulged by the artful traders who traffic with them. While under the influence of intoxication, they disclose all their plans to each other; and in these unguarded moments, the trader or his agent contrives to hear their communications, in order to take advantage of their simplicity.*

It is calculated that, on an average, a Finlander annually consumes fr m 27 to 30 rix-dollars in brandy, which is equal to the

* Clarke's Travels, vol xi. pp. 334–5.

purchase of a cask. Neither Finn nor Norwegian drinks brandy to keep him warm, to promote digestion, or to lighten labour, all is consumed before the door of the merchant with whom he trafficks, and the infatuated being would be surprised at himself were he to return home without becoming raving mad with brandy. Edicts have been issued to prevent the merchants supplying them with this liquor to excess, but to no effect. The poor creatures, when reproved for such irregularity, exert all the little intellect and ingenuity they possess to defend the practice. With the greatest self-complacency, they urge as an unanswerable argument, that "brandy is as equally strong, and as equally nourishing as bread, because like bread it is prepared from grain, and bread being the staff of life, brandy which is prepared from it, must be equally nourishing as it is exhilarating:" thus this unfortunate propensity enervates every spring of activity, every incentive to improvement, and every moral sentiment.* By the influence of this beverage, the imaginations are carried to the height of frenzy and enthusiasm. In their moments of merriment, they boast of an intercourse with fairies at banquets and dances; they talk with triumph of the feasts which they have shared in the elfin-caverns, where wine, brandy, and tobacco, the productions of the fairy regions, have flowed in abundance. With these and similar notions, many of the gloomy days of life are enlivened; while poverty is forgotten amidst the reveries of intemperance and folly.

When Mr. Bullock, an Englishman, visited Finland in 1822, for the purpose of procuring a herd of rein-deer, he could effect nothing without brandy. One of the natives, finding he could not get a glass, told this traveller and his companion that "he wondered what sort of people they were not to have so much as a drop of brandy." Barrow, who lately visited Finland, confirms the observations of Mr. Bullock; he affirms that drunkenness is a habitual vice among the Finlanders; they drink votki raw, and in large quantities, so that they soon become intoxicated.

It may be generally remarked of all these northern hordes, that the precept of their ancient god who recommended full cups, has been devoutly followed; *ale* and *mead* were the favourite beverages of *Odin*, but these have long given place to the more bewitching delusions of the alembic. To these may be added as a favourite amongst the Finlanders, the pleasing liquor extracted from the birch-tree, a drink, which, in some places, is manufactured much in the same manner as in Norway; it loses its strength, flavour, and agreeable qualities in about ten days, if not made with the greatest care.

* Vide Von Buch's Travels through Norway and Lapland, p. 296.

Finland being thinly inhabited and badly cultivated, there are few manufactories; and though barley, rye, and buck-wheat, are cultivated, yet the poorer sort of people, for want of better sustenance in times of scarcity, dry even straw which they bruise and mix with some meal, and make bread from this compound. At Abo, the capital, however, may be found every species of European wines, and that sort of claret called *La-Fitte*, which here, as well as in Sweden, is denominated *Long Cork*, and is a great favourite with the people. *Votki* is also plentiful; in flavour it resembles whiskey, is exceedingly fiery, but when mixed with water and sugar, is by no means an unpleasant beverage, although by some it has been execrated as a most unpalatable and villainous spirit.

In most of these northern regions, the rein-deer moss *(lichen rangiferinus)* is also used as fodder for cattle, and has the effect of adding a superior richness to the milk and butter: being crisp and agreeable, it is sometimes eaten by the inhabitants. The flowers of the hægberg *(cornus mascula)* flavour their distilled spirits: the moss, besides being a substitute for mortar, is employed in calking the interstices between the under-walls, and in closing fissures in their humble habitations.

In Russia, distillation is one of the most extensive and beneficial branches of trade carried on in that empire, brandy being the idol of the people. According to Storch, this art was first introduced into the country in the sixteenth century, the knowledge of which was obtained from the Crimea when that peninsula was in the possession of the Genoese. Shortly after its introduction, spirits became the rival of mead, the chief and original drink of the country.

The manufacture and consumption of brandy are calculated at 5,500,000 vedros.* For the production of this quantity, about 1,650,000 chetverts,† or 11,000,000 poods of corn are necessary. The sale of it has been hitherto a monopoly of the crown, and the right to distil it confined, with the exception of a few privileged provinces, to the nobility who possess landed estates. In all those parts of the empire where grain abounds, distillation is carried to the greatest extent. The fertility of Little and White Russia, Livonia, Karkof, Varonitch, Orel, Kursk, Kalouga, Tula, Iver, Nijegorod, Kazan, Simbirsk, Penza, Tambov, Saratov, &c. affords ample means to distillers.

The following enumeration of a few of these distilleries made some

* A vedro is a measure that contains $2\frac{7}{10}$ Imperial gallons.

† A chetvert is reckoned equal to $5\frac{3}{4}$ Winchester bushels.

years since in the province of Penza and the adjoining districts, may afford an idea of the magnitude of these establishments.

1st, A distillery belonging to the crown domain Doorzovye, where 150 labourers were employed to work 80 stills, in which were made 100,000 barrels or eimers of corn spirits.*

2d, A distillery in Brilovskoi belonging to the imperial college of finances, where, from 90 stills worked by 160 men, 110,000 barrels were produced annually.

3d, A private distillery consisting of 20 stills which made 30,000 barrels.

4th, A distillery in the district of Insara belonging to a private family, in which 24 stills, wrought by 55 men, yielded 7,000 barrels.

5th, A distillery in the district of Moksha, the property of the Annikof family, where from 6,000 chetverts of corn and 3,000 fathoms of wood, 15 stills, wrought by 40 men, produced 33,000 barrels.

6th, A distillery at Kutlinskaya, Sloboda, where from five stills wrought by 30 workmen, 7,650 barrels of spirits were made from 1,700 chetverts of corn ; 1,530 fathoms of wood were consumed as fuel.

7th, A distillery in the village of Suamenskoi, where two stills wrought by 20 men, produced from 400 chetverts of corn, 1,600 eimers of spirits, and burned 550 fathoms of wood.

8th and 9th, Two distilleries in the village of Nishnayashkaffta, in the district of Gorodishtshe, the property of a nobleman, one of 12 the other of 13 stills, managed by 50 workmen ; these yield together 50,000 eimers of spirits annually.

10th and 11th, Two distilleries in the village of Siramas belonging to a noble family, in one of which were 12 stills wrought by 50 workmen, producing 11,000 barrels of corn spirits ; and in the other, 5 stills farmed out and wrought by 10 men, 4,000 eimers of spirits were yearly made.

12th, A distillery near the village of Petrovka in which were 13 stills worked by 70 men, who in some years distilled 7,000 eimers of brandy.

13th and 14th, Two distilleries, one in the village of Stolipina, the other near the village of Mamsa, they consisted of 35 stills each, and were worked by 90 men, who distilled upwards of 90,000 eimers annually.

15th, A distillery in the district of Kerensk, in the village of Nikolsky, or Kitta, containing 30 stills wrought by 72 men ; from 2,135

* An eimer is equal to about 3¼ English wine-gallons.

chetverts of corn and 2,000 fathoms of wood, 5,000 eimers of spirits were distilled.

16th, A distillery near the village Polivanova, the property of a noble family, where 16 stills wrought by 45 men produced 8,150 eimers of spirits from 2,370 chetverts of corn, and a consumption of 7,000 fathoms of wood.

In the whole of Penza there were 397 stills wrought by 982 men, in these stills 86,279 chetverts of corn, and 96,375 fathoms of wood were consumed in the manufacture of 554,401 eimers of spirits; the annual produce of spirits in the district is, according to Pallas, 2,000,000 gallons.

When Captain Alexander visited the seat of war between the Turks and Russians in 1829, grain was so abundant in those parts, that the proprietors found the distillation of it the most profitable mode of consumption. One distillery he knew to produce one hundred vedros per day, each vedro of twelve quarts being sold for two rubles or twenty-pence British.

Rye and barley are the kinds of grain principally used in all distilleries; these for the most part are malted and mixed in proper proportions. To a vessel containing about 500 gallons of boiling water, are put 900 pounds of ground barley malt, or rye and barley ground to meal; these when well mashed with rakes and thoroughly mixed together, are allowed to stand until the liquid becomes viscous and holds in solution the saccharine matter of the grain; water is afterwards added to bring it to the consistence at which they wish to ferment it. When the wash is completely finished, the liquor is drawn from the tub or kieve, and put into proper vessels, where barm or yeast mixed with cold water is added, and the vessels being secured from the admission of atmospheric air, the material is allowed to ferment, until it has arrived to that stage at which it is deemed fit for the still. Some only draw a part of the wort from the mash-kieve in the first instance, and mix it with barm, allowing the remainder to stand until it becomes a little tartish, before they pour what was taken out into the kieve. The whole materials, brewing, grains, and all, are there mixed and fermented together. This rude mode of preparing wash has been long practised in Russia, and is considered highly injurious to the produce of the grain. The extract is said generally to fall far short of what is obtained in Holland or in our own country. While eighteen gallons of spirits were taken from a quarter of grain in Britain, eight only were obtained in Russia, hence it is estimated that the Russians annually lost in their distilleries not less than to the value of £3,500,000 and an half sterling.* From a chetvert of corn,

* Parl. Rep. on Distilleries, and Evidence thereon, 1799.

weighing 9 poods* or 360lbs. a Mr. Vassili Nicolavetch Subof, director of economical affairs in the government of Pensa, extracted six eimers and a quarter of spirits; while others from the same quantity of grain, could get only five eimers. This he attributes to the temperature of the hot water used in the mash, which he regulated by means of cold water and ice, and preventing the spirituous parts from making their escape during the progress of fermentation. His general extract was seven eimers and four-fifths of common proof spirits, from ten poods or 400lbs. of grain.† At the distilleries formerly conducted at Moscow, were usually drawn from one chetvert of barley malt, five or five and a half vedros of brandy. But there are few instances in which the Russian distillers can be said to have shewn much improvement or real practical knowledge.

Spirits are commonly distilled of such a strength, as that not less than one-half of the fluid shall burn away, either in a silver or copper vessel; but of late the hydrometer has, in some places, been adopted as a test of more accuracy.

The revenue arising from the sale of brandy is very extensive, according to Tooke, who estimated its amount at from eight to nine millions of rubles. Until 1752, it was farmed for £540,000 ; until 1770, for £620,000 ; until 1774, for £900,000 ; and until 1778, for £1,500,000 ; in 1779 it was let for four years at the sum of £1,800,000, since which time it has been gradually increasing. So far back as 1789, the licenses to inns and taverns yielded £1,708,338, and the brandies sold in the cities of Petersburg, Moscow, and the parts adjacent, amounted to 3,320,000 rubles per annum. This is not remarkable, when in the city of Moscow alone, there were no fewer than 4000 kabaks or shops for the retail of brandy. The crown, or rather the chamber of revenue, farms all the kabaks, and the contractor or merchant who supplies them with spirits is prohibited from distilling himself, but is obliged to buy all from the functionaries of government, who either draw the brandy from their own distilleries, or obtain it by contract from those of the privileged provinces. When any person farms the kabaks, he is allowed to keep beer, mead, and wine in addition, which, with other trifling advantages, enables him to pay the government three rubles for every vedro of brandy, and to sell it in those houses at the same price.

Besides the produce of the corn distilleries, the Russians make several intoxicating beverages. Beer is brewed in Petersburg, Mos-

* A pood is equal to 40lbs. Russian weight, or $36\frac{1}{10}$lbs. English,

† Pallas's Travels, vol. i.

cow, Nishney Novgorod, Riga, and other places. That of Riga is of a superior class; and the ale brewed on the Okka, in the government of Nishney Novgorod, is said to resemble Burton both in quality and flavour. Some of the establishments for conducting this branch of trade are pretty extensive. We are told of one that Mr. Herrmann visited, which had seven long vats, each holding about 250 vedros or 25 barrels of 40 gallons each. One and a half chetvert of rye-malt, three of oat-malt, three of barley-malt, and one and a half pood of hops were used at one brewing. From this, 130 vedros of beer were obtained, which sold for about 20 rubles. Nine brewing establishments at Serphuchoff, several at Oral, and in many places beer is so cheap that it may be had for an halfpenny a bottle.* Strahlenberg says, that they make of oatmeal, or wheat and hops, a thick white liquor called *braga*, which when fresh is pleasant enough, having a tartish or vinous flavour, remarkably heady, and is drunk only by the common people.† The Usbecks make this liquor of rice and occasionally of millet. The brown beer of the Calmucks, called *schara*, signifying red or dark yellow, has to this a strong resemblance. In some of the southern provinces it is made of millet softened to a pulp and mixed with malted rye and barley, with an addition of oats. This liquor seldom assumes a clear colour, but when sufficiently fermented it is reckoned very intoxicating. Hops are plentiful in many parts of the empire, and grow wild, particularly in Little Russia or the Uralian mountains, on the Altay, and in Taurida. Some are cultivated by the peasantry, but the chief supply is drawn from foreign markets. Boetticher calculates the annual import of this article at £21,874.‡

The ordinary household beverage of Russia is *quass*, a word signifying *sour*, one of the ancient Scythian beverages, a drink prepared, according to Tooke, as follows:—To one chetvert about 35lbs. of barley-malt, two or three handfuls of rye-malt, and the same proportion of unbolted rye-meal, are added, and the whole mass is thrown into iron pans, where it is stirred with a quantity of warm or boiling water until it resembles thin porridge. About two inches deep of oat husks are then thrown over it, when the pans are placed in an oven where they remain for 24 hours. Boiling water is again poured upon it, till it is full to the brim. It is then poured into wooden vessels, the bottoms of which are covered inside with straw, having a plug or cock to let out the liquid. Lukewarm water is now added, and the whole is suffered to stand for some time. When it has stood

* Cochrane's Narrative, vol. i. p. 105.

† Strahlenberg on Northern and Eastern Asia.

‡ Vide Playf. Trans. Boetticher's Tables No. 12.

as long as necessary, it is drawn off into casks, in each of which a piece of coarse rye-bread is put to acidulate the *quass*.

The casks are placed in a cellar, and in twenty-four hours it is fit for drinking. From the proportions of grain mentioned, six or seven vedros of *quass* are obtained. It may be made of barley-malt alone; but the rye-meal is absolutely necessary.

In most places, continues Tooke, they do not go circumstantially to work. It is even customary to leave out the barley-malt, adding much more meal than rye-malt: the proportion to half a pood of meal being only two or three handfuls of malt. Instead of bread they put in some yeast of the former brewing. Some add raisins, which cause the *quass* to acquire a strong foam. Numbers make *quass* from rye-meal only. But in all the modes of making it, cold or tepid water is poured on the ingredients, the pans being greased and set in hot ovens.

Another kind of *quass*, called *kisslyschtschy*, is made with boiling water and rye-meal alone, the mixture being violently and frequently stirred about in hot water. Cold water is poured upon it, and the vessel set by fermentation, after which it is bottled. This fine drink foams vehemently, and effervesces with the solution of a gas that sparkles like seltzer water. The *kisslyschtschy* has some resemblance to the hornerbier of Vienna. In some houses they also use a small quantity of honey or raspberries and cranberries, with other fruits, in making *quass* from which it acquires an agreeable ruby colour and becomes extremely pleasant to the taste.

The most simple mode of making *quass* is, as described by Mr. Johnson, by steeping a certain quantity of bread in hot water, until it gets into the acetous fermentation in which state it is checked and fit for use.*

Granville describes the manufacture of *quass* in a different manner. He says, that it is composed of 20lbs. of rye, 10lbs. of rye-malt and 3lbs. of barley-malt, the two species of malt being mixed together with tepid water in an earthen vessel till it forms a sort of liquid paste. It is then covered for an hour, after which some water is poured over it, and the rye-meal is gradually added, stirring it all the time so as to form a paste-like dough. The vessel is then covered and made air-tight with bread-paste, when it is placed in an oven of a temperature equal to that when bread may be considered half-baked, where it remains to the following day. The oven is then heated again, and the vessel replaced in it, and on the third day is removed, and the paste diluted with river water, during which operation it is stirred

* Journey from India to England, 4to. p. 257.

continually with a large wooden spoon. The whole fluid is next put into a barrel with a sufficient quantity of leaven, where it is stirred well for some minutes and set aside in a place of moderate temperature. As soon as froth appears on its surface, the barrel is carefully closed and carried to an ice-house or cold cellar, and at the end of two or three days it is fit for use. To the ingredients mentioned above, some add half a pound of mint and two pounds of wheaten and buck-wheat flour, which are said to improve its taste and heighten its effervescence. In the southern parts of Russia, quass is made by filling a large barrel with fruit, sometimes plums, apples, crabs, or, in short, any fruit of which a sufficient quantity can be procured. The cask is then filled with water, and the whole is allowed to ferment: at the expiration of fifteen days it is fit to drink. When a portion of this *quass* is drawn out of the vessel, water is poured in to supply its place; and thus a sufficiency is kept up until the time of year when it can be again manufactured.*

In the Philosophical Transactions, there is a letter from Doctor Guthrie to Dr. Priestly on the antiseptic regimen of the natives of Russia, in which is given the mode of preparing the common and better sorts of *quass* used in that empire, which does not differ materially from that already mentioned, but which the reader may consult should his curiosity lead him to further enquiry.†

Barrow gives a good sketch of the arts that are practised by the keepers of the quass, or gin shops, to obtain customers. At the outside of the door are invariably stationed two or three young men, each dressed in a pink-coloured coat, which folds over the breast, and is tied in with a sash at the waist, with loose blue trousers tucked into a clumsy pair of boots. They wear their hair very long and divided in the centre.‡ When any one passes near a shop, these decoy lads plant themselves directly in his way and commence a series of salutations, bowing almost to the ground with their hair hanging dishevelled about the face, rendering their appearance ludicrous, and in this posture they earnestly entreat his entrance, and in such a manner that it is scarcely possible to pass without purchasing a draught. The quass, which is carried about in glass decanters and vended in the streets, is very different from that sold in the shops. The latter is a most delicious beverage, especially on a sultry day in summer, when brought up iced from the cellars. A great portion of

* Holderness's Journey to the Crimea, 8vo. pp. 21-2-3.

† Vol. 68, pp. 627-8-9.

‡ Barrow's Excursions to the North of Europe, in 1833, 8vo, p. 110.

the liquor sold under the name of quass is a weak spirit mixed with raspberries. Mr. Barrow, as well as Dr. Lyall, asserts that the Russian peasantry are rather temperate, that is, they do not indulge in excesses of drunkenness, and that many of them could not be induced to taste spirits.

The Russians have also a good kind of beer called *pivo*, which is in common use and resembles the German beer. Among the better classes, English porter is esteemed a luxury. Various sorts of drink are vended by men through the streets of St. Petersburg, amongst which is one called *Sbitena* or *Sbetin*, a favourite with the populace. It is made of honey and hot water, and it is customary to mix pepper with it, and to drink it hot with the addition of boiling milk. The taste of this liquor is agreeable, but it is not intoxicating if taken merely by itself.*

Mead, the ancient and favourite drink of all the northern nations, is as much in request in Russia as *quass*. It is manufactured in great perfection, and is usually of two kinds, white and red. To make the first, says Tooke, two poods of white honey are mixed in five ankers of clear river or soft water, and boiled and skimmed till nearly an anker is boiled away. The liquor is then strained through a fine sieve or piece of linen into a broad open vessel, and mixed with a couple of spoonfuls of beer lees, and a pound of white bread, *kalatsch*. After it has stood in the vessel, in a moderately warm place, and fermented for thirty-six hours, it is poured through another sieve or piece of linen into a cask, in which has been previously put a pound of small shred isinglass for clarifying it.

For red mead, to one pood of honey they add eight vedros of water, and reduce them by boiling to six vedros. When cold, the juice of about half a chetvert of pressed or bruised cranberries, strained through a sieve is mixed with it. A small portion of yeast is then applied, and a roll of clean sand with about four ringlets of isinglass or the albumen of eggs is thrown into the vessel to clear or fine the liquor. Cinnamon, cloves, ginger, mace, and other spices are infused. It is placed in a cool cellar, and, after standing there for some weeks, it is either bottled for use or drawn from the cask direct. When properly made and preserved, it is considered by many as equal in strength and flavour to Tokay. Clarke met some Cossack mead thirty years old, which tasted like Madeira.

Strawberries, raspberries, and cherries, are often used in the making of *mead*, and, in most cases, the stones or seed of the latter are bruised

* Granville's St. Petersburgh, vol. ii. p. 422.

and put in along with the fruit; and these, with the aromatics usually employed, are thought to improve the flavour and quality.

The honey of which the metheglin is made in such abundance, is of the best kind, and forms a considerable article in the trade of the empire. The great bulk of it is drawn from the bee-hives reared in the Oka, on the Don, in Little and White Russia, in the Polish provinces, and in the western tracts of the southern Ural. Independent of the internal consumption, the export to foreign countries is considerable, and amounts in value, on an average, to from 6 to 10,000 rubles in the year.

There are many tribes in Russia who scarcely follow any other employment than that of rearing bees. Pallas and Tooke tell us, that among the Bashkirs are individuals who possess, besides their bee-gardens, some hundreds, nay some thousands of wild bee-hives in the forests, and obtain annually from 40 to 100 poods of honey. The hives are formed in the hardest and strongest trees, upwards of five fathoms from the ground, by excavating the trunk, and closing the aperture with a board perforated with small holes for the bees to enter. The greatest enemies to their labours are bears, who frequently make terrible havoc among the hives. To defeat the purposes of this animal, the peasant is often obliged to have recourse to some curious contrivances, of which the following appear the most singular :—

Knives are placed in such parts of the tree where the bees are situated, that the bear in climbing or coming down, may encounter death almost at every step ; some, however, have been cunning enough to elude this contrivance altogether, by removing the knives with their paws. A block of wood is sometimes suspended before the entrance to the hive, which, as often as the bear attempts to remove it, falls back and hits him on the head, when he becomes so enraged, that he is frequently precipitated to the bottom, on spikes prepared to receive him. Boards are often suspended from a neighbouring branch, like scales, and so fastened to the tree where the animal climbs, that when he gets upon the platform and attempts to rifle the hive, he finds himself in a moment separated from the object of his search, and swinging in the air, with the prospect of a descent upon spikes below, threatening instant death. Others, again, cut the trunks into blocks, which they hollow and close at both ends, leaving an opening on the side for the bees: this plan is generally found to prove more than a match for the ingenuity of the luxurious brute. Another method of destroying this formidable enemy to honey, is, by putting strong spirits into the honey-combs in the trees, and the bear,

ravenous of the honey, and unmindful of the flavour of the spirits, takes so much that he soon becomes intoxicated, and falls an easy prey to his destroyers.

To the industry displayed by the Russians of the southern province, in the rearing of bees and preservation of honey, much praise is due; and were these labours imitated by our own countrymen, the money transmitted from Great Britain to other nations for honey, which is said to be not less than £240,000 annually, might be saved.

The other liquors most common in Russia, besides those already mentioned, are made from fruit of various sorts, such as apples, pears, plums, currants, cherries, gooseberries, raspberries, bilberries, cranberries, &c., and the juice of the birch tree. The preparation of these varies in different places, and is generally regulated according to the judgment or taste of the persons who conduct the process. Tooke observes, that in making cherry-wine, about five or more vedros of the ripe fruit are crushed in a tub, until the stones are broken; and that to each vedro, one and an half or two pounds of honey and a pint of good brandy or wine are added, with a little yeast to make it ferment. When it has properly cleared itself of the yeast, it is poured into kegs or bottles and placed in a cool cellar.

Among the plants which grow in the deserts, near the banks of the Volga, the *dwarf almond tree (amygdalus mana)* is the most plentiful. Its fruit is called *babovnick*, or Calmuck walnuts. Some landed proprietors collect this fruit, and extract from it an oil which, though bitter, is very agreeable in salads. Its taste somewhat resembles that of peach kernels, and a spirituous liquor is also distilled from it.* These are the principal drinks made and used by the Russians.

In some of the southern parts of the empire the vine is cultivated; and wine is made, but not to such extent as to supply the popular demand. Dr. Clarke observed, that the wild vine flourished at Woronetz, which lies in the 54th degree of North latitude; while it is well known that the vineyards of Europe terminate many degrees nearer to the equator. The most important vineyards are those of Astracan, which, at one time, were cultivated at the expense of the crown, but are now principally in the possession of private individuals. These vineyards are 135 in number, 21 of which still belong to the state. Vines were first brought into that region from Persia, by an Austrian monk, in the early part of the seventeenth century; and their culture having been found to succeed, the Czar Ivan Vassilie-

* Pallas's Travels.

vitsh, in the year 1613, caused them to be planted about the city. Peter the Great also encouraged their cultivation; and the grapes became so excellent in his time, that they were exported to St. Petersburgh for the use of the imperial table, and for such of the nobility as could afford to purchase them, a practice still carried on to advantage. Great caution is observed in the carriage of those grapes; they are packed in red millet, in wooden cases, to prevent bruises on the road. A pood of them costs between two and three rubles on the spot. In the vineyards above mentioned, white and red wines of a superior description are produced, which some compare to the *Lacryma Christi* of Germany, the *Vin de grave*, or the Champagne of Burgundy. In making wine, the grapes are put into canvas bags, trodden with the feet in troughs, and afterwards squeezed in wooden presses. Pallas found in the cellars of the proprietor of two villages near Astracan, 14,000 vedros of wine, ready for sale, kept in very large casks: some of these were near 20 years old, the produce of the Hungarian grape. The wines here contain a considerable portion of brandy, and no description is sold until it is three years old. A good sort of wine is made from grapes without stones, called *Kyshmis*. Here are annually pressed from 4 to 5,000 eimers of wine, and the oldest casks are always filled from those succeeding in the order of time. In some of the vineyards, the bunches of grapes are so luxuriant, that they measure from two to three spans in length and mills are erected for conveying water through the plantations.

In the government of Astracan, brandy of an excellent kind is distilled in considerable quantities, with which they preserve their wines, as well as supply the numerous kabaks and caravansaries. At Sarepta, on the Volga, distilleries of spirits and breweries of beer have been established by a Moravian colony, who settled there some years ago. They brew also a description of beer from the water melons which there abound; it is regularly hopped like other beer: a marmalade is prepared from this fruit, which is used as a substitute for sirup of treacle, and it is supposed that a tolerable wine might be made from it, were the process undertaken. The Cossacks, particularly those of the Don, cultivate the vine, but not in such abundance as to permit its being distilled into brandy. The grapes are said to be good, and were they not pulled too soon, the wine manufactured from them would, in the opinion of Dr. Clarke, surpass all others in the world. The Don wines consist of white and red; and were the French practice in making them followed, from the rich and generous nature of the fruit, they could not fail to maintain the good opinion given of them by the Doctor.

The practice of burying the vine during winter is injurious; but this the Cossacks are obliged to do, to save it from the severe frosts of the country. A similar practice, as mentioned by Strabo, was observed from the most remote antiquity, in the country near the Bosphorus.* In 1772, the whole produce of the vineyards of the Don did not exceed from 70 to 80 hogsheads, of 40 eimers each; but the increase since that period has been considerable.† A number of German vintners have been encouraged to settle on the banks of this river, which has influenced others to establish breweries in the neighbouring districts. The vineyards of Count Platoff are remarkable for their extent and excellence, as well as for the various sorts of delicious wines which they produce; some of them, when not adulterated, are equal to the light French wines. These wines are in general pleasant, and effervesce like champagne, but have more the flavour of burgundy. It is a practice among the Russians in summer to serve along with their wine a plate of ice, a piece of which is put into each glass, when the wine is about to be drunk. The best Don wine is made near Tcherkask, and it is usually manufactured from grapes not quite ripe, which some conjecture to be the cause of all wines exhibiting effervescence. Klaproth mentions a kind of champagne called Symlianskii, which is distributed over all Russia, a great favourite, and commonly bearing the name of *Donsky vino*. It is, however, frequently injured by the intermixture of potash, which causes it often to produce headache and disorders of the stomach.‡ The wine made on the banks of the Terek, of the Volga, near Saratov, in Ekaterinoslav, and in the Taurida, are good; and were its sale not injured by the importation of Greek and Moldavian wines, it might be turned to great advantage. The Caucasian Tartars, although they profess the Mahometan faith, drink wine publicly, which they render very inebriating, by hanging the unripe heads of poppies in the casks while fermentation is going on.§ The mountains inhabited by these people are very fertile, and the vines grow so luxuriantly, and climb to such a height about the trees, that in many places the inhabitants find great difficulty in gathering the grapes.

The wines of the Crimea rank so highly, that they are in demand even in the remote governments of the empire; and at St. Petersburgh, they are in such repute, that there is a chartered company for the management of the sales of these wines, supported by the emperor

* Geogr. Lib. viii.

† Pallas's Travels, 4to. vol. ii.

‡ Klaproth's Travels in the Caucasus and Georgia, 1807–8, p. 85.

§ Tooke.

and other high characters. The valleys of Soudak and Koos are considered to yield the best. Upwards of 30,000 eimers are annually produced, nearly one-third of which is sent to Cherson. The imperial vineyards at Soudak, a name which signifies the valley of grapes, are of great extent and afford many varieties, not only of the native vine, but of others introduced at different periods. Soudak grapes are considered the best in the whole Taurida, particularly one sort of an oblong shape, and of the size and firmness of a small plum, the bunches of which are sometimes four or five pounds weight. The wines made here are distinguished by the names of the places from which the vines were brought, such as white wine of Corfu, red French wine, white Hungarian wine, and red Claret.

The whole quantity of wine produced in 1821 from these vineyards was 60,000 vedros, each equal to fifteen small-sized bottles, which was disposed of at about from $2\frac{1}{2}$ to 4 rubles the vedro, yielding a revenue of nearly 200,000 rubles. Since the royal vineyards have been placed under the superintendence of Baron Bode, their produce both in fruit and wine, has greatly improved, owing entirely to his great care and exertions.* Pallas attributed the inferiority of the wine in his time to the over irrigation given by the Tartars to their vineyards, which, although it increased the size of the grapes, very much injured the flavour. During the time that Mary Holderness resided in the Crimea, namely, from 1815 to 1820, she observed that vineyards were once a very profitable culture, but that since the free importation of Greek wines, the home manufacture had been seriously injured. Improvements were then beginning to take place, and the culture of the vine, formerly confined to the valleys, was ascending the sides of the hills, and likely to repay the care and toils of the planter.† The cellars at Soudak are very superior; that of Admiral Mondizinoff, excavated in the side of a mountain, is calculated to hold 100,000 vedros, which at 10 quarts the vedro, would be upwards of 2083 pipes, of 120 gallons each.

The Jews are great traffickers, not only in the fruit, but in the making and vending of wines. They are the chief purchasers of the grapes brought from the mountainous districts of the peninsula, as well as of those from the neighbouring vineyards. In Karasubarar, near the centre of the Crimea, they possess a number of very fine wine cellars, but which seldom contain any but new wine, owing to the rapidity of the sales. At this place there are upwards of two

* Travels through the Crimea in 1829, 2 vols. 8vo. vol. i. p. 281, by Captain Alexander. Lon. 1830.

† Holderness's Journey, 8vo. p. 282.

hundred shops open for the sale of fruit alone; and the price of a vedro of wine, of fifteen bottles, varies from three to six rubles. When Webster visited the peninsula in 1826, the whole annual produce was reckoned to be 6,750,000 pints of wine, Paris measure, and the grapes were in such estimation that they were sent to Moscow and Petersburgh, where they procured a rapid sale.

Among the Crim Tartars, it was formerly a great trade to prepare bekmess, or marmalade, and the misseless, or sirup, from their grapes; but the sale of fruit and wine was found to be more profitable, and lest any thing should be lost in this way, brandy was distilled from the refuse of the vintage. The vats in which the fermentation was carried on were pits made in the earth, well covered and plastered with clay. The lees of 100 eimers of wine generally yielded four eimers of brandy. Besides this home distillation, large importations are made of *sekis-kayavodka*, or brandy prepared in the island of Scio, from fruit and the lees of the grape. Many of the farmers import fruit, wine-lees, and a poorer sort of wine from the Greek islands of the Archipelago, to supply their distilleries with materials.

The Crimea was early distinguished for its fertility and commerce. Mithridates drew annually from this country and its dependencies twenty minæ of corn, or 720,000 bushels, with 200,000 ounces of silver: and Strabo* relates, that Leucon II, king of the Bosphorus, sent from Theodosia to Athens, during a great scarcity, 100,000 medini of corn, 330 millions of pounds, making 148,660 tons. An idea of the state and pomp of Mithridates, and of the extent to which the luxury of wine drinking had been carried in those days, may be formed from the circumstance recorded by Appian, that when Pompey visited the city of Talura in the Taurida, he found 2,000 cups of onyx set in massive gold along with other articles of immense value; hence the city went by the name of Mithridates' wardrobe. Such was the immensity of trade in that quarter, that at the port now called Sebastapal, the great mart and rendezvous of the merchants of the ancient kingdom of Colchis, 120 interpreters were kept by the Romans, to facilitate their commercial transactions. Yet with all this wealth, power, and intercourse with other nations, it does not appear that any knowledge of distillation existed in that peninsula; nor can I find that this art was introduced there previous to the settlement of the Genoese in the 15th century This opinion is confirmed by Storch, who believes the Crimeans first learnt it from the inhabitants of Italy or Spain, and various coincidences in terms yet remain as a further corroboration; for instance, the Genoese term for a cask or

* Book vii. p. 448.

barrel is *bari*, and that of the Crim-Tartars *baril*, bringing it very near our English word barrel.

The *arraki* of the mountain Tartars, which is prepared from sloes, dog-berries, elder-berries, wild grapes, and plums, is sold in common with the strong beer, or busa, brewed from ground millet. Hops are grown in the Crimea, the best are found among the German settlers who use them in their private brewings. The ordinary drink of the people is made by triturating and dissolving cheese in water: from the boiled juice of apples, pears, and grapes, a nice description of marmalade called nardenk, or nardek, is made, which is purchased by the Tartars of the Steppes, and used by them in drinks and for other domestic purposes. The Mahometan Crimeans use sherbet, a mixture of coarse honey and water. Wine they do not drink without the consent of their priests, and that only in time of sickness, even then it is but sparingly allowed, though it might be of essential service; but many of the Mahometans here drink brandy like their brethren in other parts of the world, alleging in excuse that the Prophet forbade nothing in the way of drink, but liquors that were *fermented*. Under this flimsy pretext they drink beer, thinking it does not come under the law, because they are ignorant of the manner in which it is made. From Trebisond and Sinope, quantities of marmalade and bekmess are brought, and again sent in considerable amount to Taganrog, in the sea of Asoph, for the use of the distilleries. When a failure occurs in the vineyards, the deficiency in the grapes is supplied by the beckmess, from which and the marmalade a spirit is made, held in such high repute, that it is sold in many parts of the Russian empire as French brandy. In every town and village, a khan, or species of inn has been established, from time immemorial, called the *odd*, expressly for the reception of strangers, where they are accommodated with a couch, fire and refreshments, free of expense. It is generally the mollah, or priest, who takes upon himself the benevolent office of entertaining strangers, from whom a small remuneration is expected, but not demanded. In the Crimea, there are no inns, but travellers find no inconvenience in consequence, as they are supplied with every comfort by the hospitality of the inhabitants.

Honey is an article very plentiful in the Crimea, and it affords many delicate conserves and agreeable beverages. Bees, of course, are much nurtured, and the Tartars are most expert in their management; such is their discrimination, that some of them, on seeing bees at work on the flowers in the fields, can immediately tell to what village they belong; even many are so clever in this respect, that they know of what owner they are the property. Many of the hives

are very large ; one at Karagoss was, by way of eminence, called the Espravnek. The largest, when full, yield from 60 to 80lbs. of honey and wax ; middle sized ones from 30 to 60lbs., and the least from 10 to 30lbs. For the most part, the bees hive in the hollowed trunks of trees cut for the purpose, to about six inches in diameter, and many of these trunks are carried from place to place, to suit the convenience of feeding. They are laid horizontally, piled one upon another in gardens, and when honey is to be extracted, the trees are detached merely by the smoke of burning paper held at the bottom of the hive, without the aid of sulphur, or the destruction of the insects. The cylinders are so heavy that it requires at least two stout men to carry one of them. So extensive are some villages in the honey trade, that one of them has been known to possess 50 hives at a time ; and 300 hives are no uncommon stock. Large speculations are made in this way on account of the preference given to the honey of the Crimea, beyond that of Russia, its superiority arising from the nature of the flowers from which it is drawn, and the care taken in having it pure.

Among the peasantry residing between Trebisond and Dunabourg, it is a common practice to hang the hives in the woods, that the bees may have the benefit of the first flowers of the lime trees, because they yield the finest description of honey.* The honey of the Crimea is so excellent, and in such demand, that it forms a principle article of the exports to Constantinople, where it commands a rapid sale.

From the walnut, which is cultivated to great extent in the Crimea, a sweet clear liquor is extracted in the spring, at the time the sap is rising in the tree. This liquor is procured by piercing the trunk, and placing a spigot in the incision ; the fluid thus obtained soon coagulates into a substance used as sugar. As yet it does not appear that this juice has been converted to any inebriating purpose ; but the inventive faculty of man may, in time, render it subservient to the gratification of appetite in that way. Some of those walnut trees yield 60,000 nuts annually, valued from 80 to 100 copicks per thousand. The oil expressed from the nuts is a profitable article, and the paste, after expression, serves as food for many of the poor. Cakes made from the walnut in this manner are common for sale in the shops of Geneva and Savoy, while the ashes of the nut serve as a substitute for soap in washing. On the Dnieper and at Cherson, a good deal of spirits is distilled, and at Odessa, a town built on the Dniester since 1792, there are not less than six distilleries and as many breweries. At Odessa, which is the great commercial port of the

* M. Holderness's Journey, p. 27, also Tooke's Russia, vol. iii. p. 388.

Crimea, spirits are so cheap as to shew their evil consequences in the intemperance of the peasantry. Among the higher classes, however, intoxication is rare, although wine and liqueurs are familiar, while spirits are used as a zest for dinner. This last ceremony is considered as a part of the entertainment before proceeding to the dining room ; and it is, therefore, deemed a characteristic of politeness to serve the guests with a glass of *aqua vitæ*, to increase an appetite for the luxuries of the table.*

Georgia, a country which next claims attention, is so beautifully diversified with hill and dale, wood and water, that some travellers have fancied it to have been the seat of our first parents. The vine seems to grow there in all its native luxuriance, and although wild, it appears to revel as if in its primitive home ; and after yielding more wine than is necessary for the inhabitants, such is the superabundance of the grapes, that large quantities are permitted to rot on the branches, or to be consumed by the fowls of the air, since they cannot be converted to any useful purpose. In the provinces on the Black Sea, the vine thrives without any cultivation, and is seen clinging round all the large trees, giving the country the appearance of a vast and continued vineyard.

The Georgian wine is light, and resembles a good French Vin du pays. It is not kept in casks but in hogs' skins, the insides of which are first rubbed with naptha : the flavour is, in consequence, disagreeable and requires a long period to reconcile it to the palate. In some places, the wine is kept in large jars, and in this state it is considered excellent ; but when it is transported to other places, it is carried in hogs' skins called boordooks.† These skins are sometimes inflated, bound together, and employed as floats on the crossing of rivers.

At Teflis, the capital, wine is commonly kept in capacious earthen jars, below the surface of the ground, but on bringing it thither, the skins of buffaloes, goats, and swine, are used for that purpose. Passing through the streets of that city, a stranger is struck with surprise at seeing those stuffed skins standing on pieces of wood like living animals, and viewing the owners drawing wine from them, as if it were the blood of the animal. This method of supplying wine is attended with disadvantages, as the hairy sides of the skins are first coated with naphtha, and afterwards turned inward, which communicates a disagreeable taste and flavour to the liquor ; but of this the people take no notice, as custom has rendered it familiar. Wooden vessels are not to be had, and bottles are very rare, because the price

† Kotzebue's Narrative of a Journey into Persia, 8vo. p. 58.

* For the exports, &c. of Odessa, see Addenda.

of them would amount to six or eight times as much as the wine; nothing therefore is in use but these boordooks, or prepared skins. Wine is so plentiful and cheap at Teflis, that it is sold from a penny to two-pence the bottle; beer is sold in the public market.

In this province, wine is consumed to great extent; respectable persons use silver ladles instead of wine-glasses, but frequently introduce immense horns ornamented with silver. These are emptied to the last drop, and it is not uncommon to see them pledge each other in repeated bumpers, in the same manner and with the same ease that ale or porter is quaffed in this country; yet this practice does not seem to be carried to the excess of intoxication, which has been attributed to those people. A late traveller states, that after an entertainment given by one of the princes of Georgia, the guests were conducted to an outhouse, which they were told was the wine-cellar; but to his astonishment there was no appearance of either wine or drinking utensils. In a short time, however, several persons with spades entered the apartment, and clearing away a portion of the surface of the floor, two immense jars as large as hogsheads were exposed, and after raising the covers the wine was handed about in silver ladles, and even the peasants who attended as spectators were supplied with copious libations in earthen jugs. In several districts of Georgia, both red and white wines are made of excellent quality. The red is said to resemble Burgundy, and the white to be like claret, and in no respect inferior to either. The Georgians have the reputation of drinking immoderately ; some of them are said to consume seven bottles in the day without being much intoxicated; but this is to be understood only of the affluent portion of the community.

Sherbet, which is a very common drink, is, for the most part, composed of water, sugar, and acid; and when iced, is very agreeable in warm weather, but is not comparable to European lemonade. This liquor forms a very choice beverage at entertainments, and the host is often complimented by his guests on the cheerfulness of his countenance, and is said to look as "red as his apples, as brilliant as the sun, as placid as the moon," and they bid adieu with a wish that "the roses of happiness may ever bloom in the garden of his destiny." Kotzebue relates of the Sardar of Erivan that he eagerly drank of liqueurs that were presented to him, and made no secret of his love of spirituous liquors, at the same time openly declared that he could not live without them. He observed that the Persians quaffed wine and liqueurs in immense quantities, and he met with several instances of a man drinking off a bottle of rum at one draught, without the appearance of any inconvenience from it. The Sardar's physician

defended the practice of drinking spirits, and in doing so said, that Mahomet was a fool to forbid wine, and he recommended it as a panacea to his patients. In this opinion he resembled a brother Mahometan, who defended his partiality for strong drink, by saying that the Koran affirms that the faithful shall have wine in paradise—a wine delicious to the taste, but not intoxicating, from which he inferred that the prophet only intended that wine should not be drunk to excess, since it is sinful to suppose that what is lawful in heaven is unlawful on earth.

At Mozdok, near the Caucasus, and in Georgia, the people chiefly subsist by their vineyards, and a spirit prepared from grapes, which they not only dispose of at home, but send quantities of it into Russia. These people make a good sort of wine from ripe mulberries, and an acid wine drawn from peaches is in common use, while that from the grape is considered excellent. Of the grape wines, the Modosk is generally inferior; that called Kislar, from the vine of that name, is the best, and is considered little inferior to Hermitage either in strength or flavour. The brandy made at Kislar, or Kitzliar, is of superior quality, and is a more lucrative article of commerce than wine. Kislar brandy is in request over all Russia, and is sent to the most distant parts of Siberia. From water-melons a good brandy has been distilled, and to the culture of this plant much attention is paid in the southern provinces of Russia: they flourish in many places in great luxuriance, and some of them have been known to weigh 30lbs.

On the Terek, a beer termed *Terskaia braga* is brewed from millet by soaking it in water, then bruising it, and after that boiling it, in which stage a quantity of ground malted rye and barley is poured upon it to reduce it to the desired temperature; oats are then added, and the whole is left to ferment. When this process is completed, the liquor is freed from the husks of the grain, and at this stage it is fit for use. Klaproth met with *bouza* in Georgia made from peas which is the common basis of it in that country. In some of the mountain passes of the Caucasus, the late Emperor Alexander permitted some families to cultivate small pieces of ground free, having at those places a depôt of flour, brandy, &c. always ready for charitable purposes. In Mingrelia, as well as Georgia, is to be found that description of honey called *stone honey*, which is dissolved in water and used for a common beverage. At Imerethi, or Imiretta, adjoining Georgia, the *k'wa-tapli*, or stone-honey, is found quite solid, brittle, and not viscous. It has a pleasant spicy flavour, and is discovered in the cliffs of the rocks, the honey and wax forming one mass as hard as sugar-candy. These lumps or cakes are generally white at first, but

through time become yellow, and the people carry it in their pockets to assist in refreshment. The vine grows to such perfection that the trunks of the trees are frequently above fifteen inches in diameter. The finest fruit grows without cultivation, and there is an abundance of almonds, quinces, pears, and plums. From the great quantity and superior quality of the fruit of this country, it has been compared to an extensive orchard. The wine of Imiretta is reckoned superior to that of Teflis, the Don, and the Crimea; it is sent in skins to the neighbouring countries, while a considerable portion of the revenue paid to the Mephe, or prince of the country, is collected from this article.

Ssar, a kind of beer resembling English porter, is made by the Karatschio, and it is considered the best in the Caucasus. Brandy is distilled by those people from barley and wheat; they have scarcely any other beverage except this and *bouza;* and, although Mahometans, they partake of both without any scruple of conscience, and at funerals and marriages indulge in it to excess.

The Circassians manufacture from millet a beverage called *hautkups*, which is also named *yantzokbl* by the Cossacks of the Terek. The tribes near the Ckeiban, especially the Ubuch tribe, cultivate the vine, and make a considerable portion of very good wine. The Souate wine is of excellent flavour, resembles Champagne, and if well made, would, according to Spencer, rank among the best wines in the world.* But the usual drinks of the Circassians are *skhou*, a species of sour milk and a spirit, which, like other Tartar nations, they distil from mare's milk. They have also a liquor distilled from corn of a tolerably good quality, the art of making which is said to have been communicated to them by the Cossacks; but it is more probable that they acquired it from the Persians, or some of the neighbouring nations. From whence *skhou*, or as it is termed by the Turks *yaourte*, had its origin is a matter of doubt: some allege that the Almighty himself revealed the knowledge of its use to Abraham; others say that it was presented by an angel to Hagar in the wilderness when driven from the house of her master and fainting with heat and thirst. Be this as it may, all preparations of milk are held sacred among the Tartars.

The following engraving exhibits the still used by some of the tribes of the Caucasus. It consists of an earthen jar, or pot, sometimes made of copper, covered with a lid, having a neck entering into the

* Travels in Circassia, Krim Tartary, &c. in 1836, 2 vols. 8vo.

head, which is enclosed in a tub supplied by a small water-pipe to effect condensation.

In addition to their ardent spirits, some of the tribes make a sort of drink termed *Bak-sima*, which very much resembles the *bouza* of the Turks.

In Circassia, no public inns are to be found, they being considered unnecessary from the great hospitality of the people, who contend with each other for the entertainment of any stranger that happens to come among them. His appearance is a sufficient passport, and his wants have an indisputable claim on their generosity and feeling. Considerable attention is bestowed on the cultivation of bees for the purpose of making mead, of which they are particularly fond. The bees are kept in hives, placed on stocks, and carried along with the people as they remove from place to place with their flocks and herds. A good description of honey is likewise obtained from the mountain bees ; it is commonly preserved in goat-skin bags, having the hairy side outwards, and is, in this manner, carried for sale to the public markets. From the Caucasus is obtained that celebrated *inebriating*, or, as it is usually termed *maddening* honey,* which the bees collect from the blossoms of the *rhododendron* and *azalea pontica*. This extraordinary production never fails to affect the mind with

* Klaproth's Travels in the Caucasus and Georgia, 4to. p. 405.

strange reveries, and frequently causes such whimsical conduct as to give the individual who has partaken of it the appearance of insanity, with all the wildness of intoxication. We learn from Aristotle, that the honey gathered in the plains around Trebisond had the same maddening quality, and he attributes this effect to the bees collecting it from the flowers of the box-trees; that it had also a purgative quality, and was almost an infallible remedy against epilepsy. He adds that it deprives those who eat it of their senses, and in this manner it operated on the army of Xenophon, when on his retreat through Asia Minor. The superstition of the country attributes to Merissa, or Mereime (Mary) the mother of God, the protection of bees, and the people say, that the thunder in its wrath would have exterminated them all, but that this holy woman concealed one of them in her sleeve, by which means the species was preserved. In commemoration of this event, a festival is held in September, on which occasion the Circassians regale themselves with viands and beverages prepared with honey.

The honey of this country is indebted, for its very superior quality and flavour, to the wild thyme and other aromatic flowers of the mountains upon which the bees feed, and it forms a most important article in the husbandry and domestic economy of a Circassian. Clarified honey, bleached in the sun till it is quite white, is a common substitute for sugar, while the honey of the comb is not only a constant article at table, but is used in almost every sort of cookery. From the walnut-tree a good description of sugar is obtained, which is considered a valuable remedy for diseases of the lungs and general debility. The mode of procuring it in the Caucasus is the same as that practised in the Crimea.

The Circassians make a kind of half-fermented liquor denominated *fada* or *fada-chusch*, that is *white fada*, but in Tartar, *braga*. Brandy they call *arka* or *fada fitza*, signifying *black fada*. Mead they term *fada flesch* or *red fada:* braga is very common and brandy little in consumption. Another drink called *tuschag-tgo*, made of water in which grape-juice boiled and concocted, is in use among the Circassians, but is more common with the Persians as a renovator, or cooling sherbet. Here the respectable people have bowls of silver or gold weighing from 300 to 500 ducats, out of which they drink on all occasions of ceremony in the name of God, of the saints, or of their deceased relatives and friends, relating the most remarkable occurrences of their lives with their heads uncovered, evincing all possible veneration and respect.

Though the Circassians are rather an abstemious people, yet they

sometimes fall into excesses in drinking, especially at their religious ceremonies, one of the principal of which consists in sacrificing a he-goat on the death of a friend. Having killed the animal, the skin with the head and bones is placed on a cross at the top of a long pole erected perpendicularly, in view of the relatives and friends of the deceased. The flesh of the goat is then boiled, roasted and eaten, after which the men pay certain marks of adoration before the skin, when the women withdraw, and the men regale themselves amply with *aqua vitæ* or such other intoxicating beverage as is most easily procured. Unhappily, these religious funeral-rites seldom terminate without desperate and fatal consequences. This ceremony of the Circassians is not unlike the *circumpotatio,* or funeral feast of antiquity, so frequent among the ancient Greeks and Romans, which in like manner was productive of disastrous effects: hence Solon at Athens and the Decemviri at Rome endeavoured to prevent the practice altogether, thinking it improper that mirth and drunkenness should accompany the grief and distress occasioned by the demise of friends.

In that part of Tartary near the source of the Kuma and Podkumka, has lately been discovered a mineral spring of an acid taste, strongly intoxicating and losing little of its inebriating qualities by removal to any distance: of this water, the Circassians occasionally avail themselves ;* and which is said to resemble the Ballston waters of North America.

Siberia, which includes all the northern parts of Asiatic Russia, is so thinly inhabited and has so little intercourse with the civilized world, little respecting it is known either as regards its manufacture or agricultural produce. In many parts of this extensive region, spirits are extracted from such fruits and grain as the country affords, but the principal supply is drawn from Russia. At a distillery on the river *Uk*, wrought some years since, there were 106 coppers, 28 coolers, and 6 stills. To every cooler was reckoned 10 chetverts of rye-malt, with a fifth or seventh part of oats or barley. The coppers were so proportioned, that they were commonly filled out of one cooler and held 42 vedros. The worts were usually drawn from the mash-tun, and the fermentation was completed in four days. From 30 to 40,000 chetverts of corn were the annual consumption ; and from each chetvert three or four vedros of common brandy were obtained. In another establishment, about sixty versts north of the city of Irkulsk, the annual quantity of brandy made amounted to 60,000 ankers.† But a few districts of this immense territory, three-fourths

* Klaproth's Travels, p. 277.

† Billing's Account N. Parts of Russia, 4to.

of which lie in the same latitude as Norway and Lapland, yield grain sufficient for the ordinary consumption of the population, the beverages are mostly drawn from the different species of vaccinium or berries that abound ; of these, the cranberry, bilberry, raspberry, strawberry, gooseberry, &c. are the principal ; from the *prunus fruticosa*, which grows plentifully, an agreeable wine is made. From the *Heracleum panacea* and the *Heracleum Sibericum*, a saccharine matter is obtained, which being subjected to distillation, affords a strong liquor, and though not very palatable, is in request in Kamtschatka. The birch yields a sap that is converted by some of the mountain tribes into an intoxicating liquor by fermentation, after the manner of the Norwegians. The trade with Siberia being a monopoly of Russian merchants, the brandy, wine, and other liquors transported thither, form a profitable part of their traffic.

As several of the chief towns are made depôts for the articles necessary to supply the country, and the mode of their conveyance from place to place being curious, a description of it cannot fail to be interesting. In transporting goods from the magazines of Yakut to Ochotsk, from twenty to thirty thousand horses are annually employed, and instead of using wagons or carts, the packages are generally thrown across the backs of the animals. In the article of rye-flour, a single horse will carry six poods, which are packed in leathern bags called *sumas ;* one of these is suspended on each side: in this manner they are very convenient for carriage and bid defiance to every sort of weather. The *sumas* are made of green ox-hides stripped of the hair into which the flour is forced when they are damp, and the surface when dry is as hard as stone. The flour then, for about half an inch thick, becomes deeply incrusted on the skin, and in this way the contents are preserved in the most perfect state through the whole winter and will remain so for almost any length of time. The horses engaged in this labour are managed by the Yakuts, who have an extraordinary influence over them, one man superintending from twenty to thirty with the utmost ease and indifference. When on the journey, should the driver stop at any time, such is the docility of those horses, that they will not proceed without him, and although permitted to feed indiscriminately in pastures during the night, they are collected in the morning by the halloos of their keepers ; should any of them be at so great a distance as not to hear him, mounted on one of them, he is soon carried within the hearing of another, which, immediately on hearing his voice, begins to neigh. This serves as a signal to all the rest, after which they are immediately seen galloping towards him as if sensible of approaching a friend.

In the province of Yakoutsk, koumiss is in much repute and of good quality ; the process is similar to that observed in Tartary. The people are very expert in the management of their milk and butter, which are carried in bags called *simmire,* and made of horse-hides. Their butter is chiefly made while travelling, the new milk or cream being mixed with a little sour ; the agitation during a journey of a few hours produces butter and butter-milk. The natives of Yakoutsk lead a pastoral life in a country abounding with fine meadows which are well stocked with horses and horned cattle. Their best koumiss is prepared from mares' milk, and is made in large tubs of birch-bark where the *mother* on which the fermentation is produced, is contained, and, being always esteemed in proportion to its age, it is preserved with the greatest care, and is bequeathed as a legacy from father to son.*

Of Siberia, it may be generally remarked, that agriculture, from the misgovernment of its rulers, is retarded by the encouragement given to the hunting of foxes and sables, both for the sake of the personal comfort of their countrymen whose garments they line, as well as for their own private emoluments. The blessings of civilisation might, with a little attention, be productive of the happiest effects, and eradicate, in a great measure, that unfortunate passion for ardent spirits, which seems to be the ruling propensity of the inhabitants of this portion of the Russian empire. Many, however, are found to be sober and industrious, and were their minds cultivated in proportion to the range of their intellect, they might become an enlightened community. If the habits which agriculture necessarily begets were more generally extended, their introduction would be attended by the most beneficial results. It is satisfactory to find that within these few years back, wheat, rye, barley, and all sorts of vegetables, are becoming plentiful ; and in many parts of this extensive country yield more than a sufficient supply for the inhabitants. Civilisation is on the advance, and even in the interior of Siberia, towns constructed according to the conceits of modern architecture, are now found, anticipating, as it were, the progress of commerce and the effects of nature. The wines and other luxuries of Europe are carried thither and sold at a very moderate price, and society in those places is sometimes found of a polite and agreeable nature.

In Kamtschatka, the most eastern district of the Russian empire, a spirit resembling brandy is distilled from a sweet grass, called by the natives *slatkaia trava;* by others, *sloka trava;* in botany, *spondi-*

* Dobell's Travels, vol. i. p. 343.

lium foliole pinnatifide. When this plant has attained its full growth, it is about six feet high, and is covered with a white down, not unlike hoar frost. It is, in taste, as sweet as sugar, but is extremely fiery, ardent, and pungent. The stock is hollow, and consists of three or four joints with large leaves issuing from each. When the principal stem, which is tuberous, runs to seed; it is very tender and palatable when stripped of the rind, and denominated *pootchkee.* The stalks of the leaves are also hollow, but the juice is so inflammatory that great care is taken in eating them that they shall not touch the lips, for if they should, an immediate blister would be the consequence. Before the country was subjected to the Russians, this grass was employed as a principal ingredient in the cookery of the Kamtschatdales, but has since been chiefly appropriated to the making of brandy. When prepared and dried, it is purchased by the government at the rate of from three to four rubles the pood. It is gathered and made ready for the distilleries in the following manner:—"The stalks being cut, and the downy substance scraped from the surface, they are placed in small heaps till they begin to heat and smell. When dry, they are put into sacks of matting, where they remain for a few days, and become gradually covered with a saccharine powder, which exudes from the hollow of the stalk. Only one quarter of a pound of the powder is obtained from thirty-six pounds of the plant in this state. The women, who conduct the business, find it necessary to defend their hands with gloves, while they are scraping the stalks, the rinds being of a quality so acrid as to lacerate any part it might touch. The spirit is drawn from the plant in this state by the following process:—Bundles of it are steeped in hot water, and the fermentation is promoted in a small vessel with berries of the *gimolost;* or of the *golubitsa;* care being taken to close the mouth of the vessel, and to keep it in a warm place whilst the fermentation continues, which is often so violent as to agitate the vessel which contains the fluid, and occasions a considerable noise. When the first liquor is drawn off, more hot water is poured on, and a second fermentation ensues in the same manner. Both liquors and herbs are then put into a copper still, and the spirit is drawn off in the usual way. The liquor thus prepared, is called by the natives *raka.* According to Steller, the spirit distilled from this plant, when unscraped, is very pernicious to health, and produces sudden nervous disorders.*

Lesseps says, that those who drink of it are sure to be extremely agitated during the night, and to experience on the next day melan-

* Cooke, vol. iv; and Lesseps' Travels, 2 vols. 8vo.

choly and disturbed sensations. But, notwithstanding those disadvantages, it is drunk by the inhabitants with extraordinary avidity. Those who do not practise the distillation of it, procure it from Russia; and the Cossack traders, who are well aware of their attachment to its delusive qualities, sometimes take advantage of this frailty, as the following anecdote related by Lesseps will fully illustrate:—A Kamtschatdale had given a sable for a glass of brandy: inflamed with the desire of drinking another, he invited the seller into his house. The merchant thanked him, but said he was in a hurry. The Kamtschatdale renewed his solicitations, and proposed a second bargain; he prevailed.—"Come! another glass for this sable; it is a finer one than the first! No! I must keep the rest of my brandy. I have promised to sell it at a certain place, and I must begone! Stay a moment! here are two sables! 'Tis all in vain! Well, come I will add another! Agreed! drink!" Meanwhile the three sables were seized and the hypocrite made a fresh pretence to get away; his host redoubled his importunities to retain him, and demanded a third glass. Further refusals were given, and further offers were made. The higher the chapman raised his price, the more the Kamtschatdale was prodigal of his furs. Who would have supposed that it should have ended in the sacrifice of seven most beautiful sables for the last glass! They were all he had.

It is known that a Kamtschatdale will sell his last sable for a glass of brandy, and such is the desire for it, that it is computed that 16,000 bottles have been consumed in the period of three or four months by 6 or 700 people. It is calculated that the money expended on spirits by one family in two or three months would be sufficient for their support for the whole year, while after these extravagancies they are reduced to the greatest want and misery. The vending of spirits in this country was in the hands of the government, but latterly the monopoly is given up; yet without advantage to the people, as an extra quantity of spirits of an inferior quality is sold throughout the country by itinerant merchants resembling our pedlers, who frequent those regions for the sake of the furs. When a Russian merchant enters the hut of a Kamtschatdale, he takes as much liberty as if the house were his own, occupying the best apartment without ceremony, and ordering dinner or supper in the same way, as well as food for his dogs. In the mean time he is over-reaching the poor host in the purchase of his furs—in many instances only giving a glass of spirits and a leaf of tobacco, for what, if fairly sold, would produce something considerable to the unsuspicious and deluded Kamtschatdale.

The fondness of these people for *vatky*, or whiskey, impels them to great exertions in hunting sables and foxes, that by means of their skins they may procure a supply of their favourite beverage for the winter, together with tea and tobacco, regardless of every other luxury.

Besides brandy, the Kamtschatdales make use of a beverage equally potent, extracted from a red mushroom known among the Russians as a strong poison, and which is considered to be the same as the *amanita muscaria* of France and Britain. This they ferment in a vessel with fruits, and scarcely give it time to clarify ere they invite their friends to partake of it. A noble emulation inspires the guests to disburden the master of the house of this nectar, and the company seldom separate until the whole is exhausted. For the use and invention of this liquor they are indebted to their conquerors; mushrooms in Russia being exceedingly abundant, the quality is well known.

Coxe tells us, that he seldom entered a cottage without seeing great quantities; and in the market-places, where they were exposed for sale, the varieties were as remarkable as the number, being white, black, brown, yellow, green, and pink.* The annual sale of these at Moscow amounted to upwards of one thousand waggons.

The species of mushroom carried to Kamtschatka is named *muchumor*, and, when boiled, communicates a strong intoxicating quality to the water. It would appear from Strahlenberg, that the rich, in some places, lay up great stores of mushrooms; and the poor who cannot buy, watch, with wooden bowls, their bacchanalian emissions, in order to procure the liquor after a secondary process. But there is strong reason to believe that this is a misrepresentation, as Strahlenberg, the only person that mentions this circumstance, was never in that country, and the testimony of subsequent writers is against him.

The Shamans, conjurers, or priests among the Kamtschatdales, never attempt to perform their incantations, or to exert their abilities in deception, until they have first eaten of mushroom, (*moohkamore*, *mouchomore*, or *agraricus muscarius)* which immediately throws them into a kind of madness, foaming all the time at the mouth while uttering their cabalistic words and expressions, which are carefully explained by the magician after the frenzy and delirium occasioned by the dose have ceased to operate.† This mushroom, according to Kotzebue, when taken in small quantities, is said to excite an agreeable hilarity of spirits; but if immoderately used, will produce insanity for several days. The Kamtschatdales, animated by this vegetable,

* Coxe's Travels, vol. vii. p. 394.

† Dobell, vol. i. p. 158.

production, entertain their guests and amuse themselves by exercising their peculiar talents in imitating men and animals.* After the same manner, the priests among the American Indians, when consulted, inhaled the fumes of tobacco to such a degree, that it threw them into a stupor or frenzy, during which their credulous votaries believed they were conversing with the gods, and on their recovery they delivered the answers to the questions propounded, which they artfully pretended were received in their communication with the invisible world.

From the *kipri* plant, *(epilobium)* is brewed a common beverage rather agreeable ; a mixture of this vegetable with the sweet herb *slokatrava,* boiled and fermented, produces a good vinegar. The birch tree yields by tapping a great abundance of juice which the natives drink without any preparation ; it is pleasant and refreshing, but purgative when unfermented. From the bark, while young, an agreeable, wholesome food is procured by cutting it into long stripes, drying it, and afterwards stewing it with their caviar or preserved fish. Wild berries of various kinds are numerous, of a large size, and fine quality; the principal are red currants, raspberries, whortleberries, cranberries, blackberries, heathberries, wild cherries, and strawberries of a strong aromatic flavour. These are preserved as jams or jellies, but without sugar, and form during the winter not only a considerable portion of their provision, but a fine sauce for their fish ; they also serve for puddings and make a decoction for their ordinary beverages. Koumiss is not unknown to them, and their butter and milk are preserved in birch-bark vessels called by the natives *Toois,* by the Russians *Bourak.* These vessels are often ornamented with flowers and figures stamped and inlaid with talc, which adds considerably to their appearance. They have a lid made so tight that they may be carried safely by the handle, which runs across and serves as a keeper. Besides these vessels, drinking-cups are made from the bark, and very ingeniously fashioned.

The Kamtschatdales are not wanting in intellect, although to a stranger they at first appear stupid ; they are a people more than dull, and are best known after having drunk a glass of watki,—a failing which not only increases their poverty but renders them devoid of principle. To their fondness for this liquor has been attributed much of the misery and the scanty population of that portion of Asia, and not to the climate or barrenness of soil. If we believe Dobell, they are a thirsty race, and as fond of the pleasures of the tea-pot as

* Kotzebue's New Voyage Round the World, in 1823-4-5-6, 8vo. London. 1830, 2 vols. vol. i. p. 16.

of the bottle. The first thing, says that traveller, that you must do when you arrive at one of their houses, is to treat the family with tea, and he adds, that he once saw a Kamtschatdale drink eleven half-pint bowls of it at a sitting, and afterwards declare he could have completed the dozen had there been water enough in the kettle. This excessive love for tea is surpassed only by the Yakuts, who drink an incredible quantity of melted butter, some of whom have been known to consume at a wedding from twenty to thirty pounds a man, contending with each other for pre-eminence in the consumption of this luxury; and what is still more singular, the master of a family considered himself honoured and was delighted to see half a dozen of these great butter drinkers come to his feast.*

Of watky or whiskey made from rye, great quantities are drunk by the Kamtschatdales. Individuals have been known to swallow from six to eight glasses of watky without having any perceptible effect, and for this enjoyment, as already observed, they would barter anything they possess. Sometimes they are driven to great irregularities, while under the influence of intoxication, and their timid disposition alone protects them from the natural consequences. Dobell records a remarkable instance of this nature in one of his own men, who, having got drunk, became so furious that he rushed from his presence with a large knife in his hand, seeking the superior of his tribe, prince Zachar, crying out that he was an unjust man, and that he would stab him. In vain did his companions endeavour to restrain him; he continued to rave in this manner until he got near to the prince's dwelling, when he bellowed out with all his force, "come out, Zachar, if you dare. I am prepared to kill you!" The prince hearing this, immediately sallied forth, and with bosom bare, desiring the crowd to stand aside. He advanced boldly up to the Karaikee, and with an undaunted countenance and thundering voice, said, "here is the breast of your prince! strike if you dare!" The Karaikee seemed petrified; he raised his hand, but, afraid to strike, the knife dropped from his powerless arm to the ground. "Coward," exclaimed Zachar, "you have saved your life, for if you had aimed a blow at me I would have hurled you to the earth, and your own knife should have let out your heart's blood." The prince then ordered the Karaikee to be confined until he became sober. The following anecdote is further illustrative of the dangerous effects, caused by the excessive use of watky, and shews the uncommon attachment that this people have for strong liquors:—One of them

* Dobell's Travels in Siberia, vol. 1.

being offered some valuable trinkets, needles, &c., for some rein-deer he smiled and said, "these are pretty things, but I am an old man, and dislike such baubles: my delight is to smoke, and now and then when I can buy liquor, to get heartily drunk; therefore you shall have this rein-deer for watky and tobacco; I want nothing else." The bargain was concluded, the old man soon became drunk, but the effects not continuing so long as could have been wished, he, with two of his companions, entered the tent of the purchaser, with their knives drawn in a threatening manner, upbraiding him with having given bad liquor, and threatening to kill him for the imposition. The narrator had fortunately at the moment his loaded pistols in his hand, and presenting them at the party said, in a commanding tone, "the first man that advances one step further, I shall shoot him instantly." They paused, trembled, and, dropping on their knees, asked pardon for their misdemeanor. They were then disarmed, and a present was made to them of another jug of liquor.*

The great fondness of those rude and simple people for spirits of all kinds, causes them often to pay at the rate of a ruble per glass for a very spurious species of brandy; yet, with all their love for it, they seldom have recourse to undue means of obtaining it. Sauer relates a pleasing instance of this honest feeling in a Kamtschatdale, who usually accompanied him on his aquatic excursions, and expended every farthing of his money on spirits:—"I one day," says he, "saw him coming to my habitation, and to tempt him, I hid myself in an adjoining room, leaving a glass of brandy upon the table, and a bottle, half-full, close to it, with some sea-biscuit. He came in, saw nobody, and called me, but obtained no answer. Upon which he advanced to the table, and smelt the glass; "It is brandy," said he, "but I will not drink, and the bottle half-full! Well, I won't taste you; but I'll go seek master, and scold him for leaving you in this manner. I'll just smell again and go." I stepped out of the window into the garden and went to meet him; when he accosted me in the following manner:—"I have been into your room, and saw a glass full of brandy; perhaps you won't believe me, but indeed I did not taste it." "I dare say you did." "No, by —— I did not, I knew you would not believe me; but a Kamtschatdale will never take anything without permission." "Well, I must believe you; will you come and drink it?" "Yes, that I will, but I wanted to scold you for leaving it so."

A stronger instance than this of forbearance could scarcely be produced from among a people vastly superior in civilisation. The

* Dobell, vol. i. p. 165.

sale of spirits and the whole of the distillery business are as already observed, a monopoly of the crown, and farmed to the highest contractor, not only in the remote regions of Kamtschatka and Siberia, but throughout the whole Russian territory. In some provinces, these contracts are made for a term of three years only: the contractors have a *comptoer* in each town for the sale of the brandy, and the retailer must have his license and his brandy from the person thus appointed. The contractors are termed Farmers-General, and are under the control of the vice-governors of provinces. The system is considered a bad one, as it is the means of enriching individuals at the expense of the bulk of the people, and giving them a spurious for a genuine commodity.

This monopoly renders the situation of a vice-governor very lucrative, and in some instances yields him annually half a million of rubles, or upwards of £20,000. The money is obtained by a per centage on every vedro or anker of spirits sold in the province, and a certain sum paid by the retailers for licenses. In return for this, all the trouble he has is to visit the different distilleries and Kabaks, to ascertain if the spirits be adulterated, but having already received his bribe from the farmer-general, his inspection may naturally be considered in proportion to the extent of the fee. Next comes the farmer-general to make his inspection, then his secretary or chief agent, each receiving an emolument, and the retailer reducing the article to meet these expenses, gives ultimately to the purchaser drink of a very bad description. Milton has noticed a similar system used in his day, taverns called *cuirsemay*, were farmed out by the emperor, or bestowed on some duke or gentleman, as a reward for his services.

The serfs consume most of their earnings in these Kabaks, or dram shops, which are conducted by license under certain regulations, and in many parts the keepers of those houses are Jews, who know well how to manage their unfortunate customers, and often boast of the great quantity consumed weekly by these misguided creatures.

As the emoluments increase in proportion to the consumption of spirits, it manifestly becomes the interest of the governor of a province to promote that consumption, for while it increases the revenue and adds to his interest with the government, it also enriches his own coffers, hence the quantity, and not the quality, produced at the public distilleries is chiefly studied. A proof of this is what is related of General Kaptzevitch, governor of Tomsk in Siberia, who ordered the officers that had charge of distilleries, to receive a certain number of stripes, if the quantity of spirits extracted from the grain was not

more than double what had been produced under the preceding governor.*

The love for spirituous liquors is prevalent in Russia; but it is generally remarked that quarrels through intoxication are less frequent in that country than in many others, the people always preserving good humour in their jolly moments. The Russian plebeian does not sit down to enjoy his friend and his glass as is common in Great Britain and Ireland, but enters the Kabak, lays down his money, drinks off two or three glasses of *vatki* or *agua ardiente*, and retires, regardless of the quarrels or the follies of his neighbours; or, if inclined to sit over his glass, the passing events or occurrences of the day have no effect on him, as he seems the mere creature of enjoyment. The attachment to drinking has been long a characteristic of the people.

Barbaro, a Venetian ambassador, who visited Russia in the middle of the 15th century, particularly notices the drunkenness of the Russians, and relates that the Grand Duke, in order to check this vice, had directed that no more beer should be brewed, nor mead manufactured, nor hops used; but all was to no effect, as the passions of the people could not be restrained by any enactments of the monarch.

At the entertainments of the respectable classes in Russia, sweet vodtki is drunk, as well as wine of various descriptions. Taking a glass before dinner is a common practice, on which occasions, according to Dr. Clarke, slices of raw turnips are handed on salvers along with the brandy. Count Platoff, whose military exploits are so well known, gained the affections of the Cossack soldiery by his suavity of manners, and attention to their comforts. He knew it was the failing of his countrymen to be fond of a glass, and in private conversation with any of them, in which he made himself familiar, he would conclude with asking, "dost thou drink *vodtki?*" If he received a negative, he would say it was well,—yet a little was necessary to protect against fatigue and bad weather; adding, that a small glass of something warm, and especially spirits with mustard, was the best medicine. Such is the weakness of the peasantry, that in their most serious acts, they mingle the levities of drinking. It is related of one, that during his devotions in the evening, he would occasionally suspend his orisons to take a draught of *quass*, and in the middle of the night he would leave his bed to repeat his libation. Even among the army, spirits are distributed on anniversaries, festivals, and times

* Cochrane's Narrative, vol. i. p. 119, 189.

of public rejoicing. It was a practice of the late Emperor Alexander, to give a ruble and a glass of brandy to every private soldier. One of the young princes, who was in the habit of officiating on one of those occasions, mistook the nature of the order, and directed, five times in succession, that the glass should be repeated and another ruble given. Such was the delicate feelings of respect that the father had for the word of his son, that he permitted the men to receive it, but privately reprimanded him for his indiscretion by stripping him for a time of his military trappings and honors.

Although the manufacture of spirits throughout the whole of the Russian empire is prodigious, immense quantities are yearly imported. In 1768, the whole amount of the imports of the vine came to 697,000 rubles, and the exports from the several parts of Russia, exclusive of those in the Caspian, in 1793, were 3971 oxh, 9 ankers of corn brandy and other spirits, valued in rubles at 66,218.

In 1794, the entries at the port of Petersburgh were for wine, to the value of 734,000 rubles, and for brandy 7,000 rubles.

In 1796, the imports at the same port were—

Of ale and porter, 7033 casks, amounting in rubles to	469,217
Brandy, arrack, rum, and shrub, 112 hhds.	32,605
Liquors, 21 hhds.	7,902
Wines of all kinds, 19,427 hhds.....	1,568,367

The imports in 1797, were—

Of beer and porter, 4,500 casks, valued at rubles	327,350
Arrack, rum, and brandy, 3544 ankers	90,237
Strong liquors, 3180 bottles	8,680
Wines of all kinds in hogsheads, 11,294, ...	985,411

In 1802, the value of the imports were 96,056 rubles.

In 1803, there were 6507 ankers of arrack, brandy, and rum, imported into Petersburgh. These imports have greatly increased since the establishment of peace among the several powers of Europe, notwithstanding the high duties imposed by the tarifs of the court, which tend to discourage an intercourse with foreign nations in the purchase of articles that may be produced at home, even in an inferior degree. Man, it is well known, is, in all regions, partial to that which best pleases his palate, and hence in those parts of the empire where the brandies and wines of France, the gin of Holland, or the rum of the West Indies, have made their way, a preference is given; since they are accounted vastly superior to any beverage manufactured within the boundaries of the Russian territories.

The imports of liquors into Petersburgh, in the course of four successive years, were :—

	1832.	1833.	1834	1835
Arrack, ankers.....	55	14	36	28
Brandy, do.	859	931	696	248
Rum, do.	7,289	6,627	7144	3723
Porter, hhds.	583	753	667	873
Do. bottles	4,840	2,400	5760	4747
Wine, Champagne, bottles.....	376,587	423,927	393441	329051
Do. French, hhds.	13,911	9,159	6559	10472
Do. Portuguese & Spanish,pipes	4,124	6,058	4215	4379
Do. Rhenish awms	1,365	1,051	1100	867
Do. All kinds, bottles	53,155	86,282	119609	156934

The imports of wine into the principal ports of Russia, during the following years, were :—

	1829	1830	1831	1834	1835
Wine in hogsheads,.....	28,729	49,132	510499	51,711	.....
Do. in bottles.....	99,581	114788	87,165	149413	118406
Do. Champagne in bottles	337489	365019	371627	503191	472365
Do. with Liqueurs in casks..	.....	.....	.....	.....	52,094

Besides the above, the produce of the vintage in seven governments of this Empire, amounted in 1834, to 27,824 hogsheads of wine which are consumed within the Empire.

The prices, when Tooke compiled his work, stood as follows :—

A hogshead of beer, when purchased from a Russian brewer, costs 8 rubles ; from an English brewer, 20 rubles ; brandy was 65 rubles the anker ; port wine from 350 to 250 rubles the pipe ; French, from 250 to 150 rubles the hogshead ; Madeira, 300 rubles the hogshead ; champagne, per case of fifty bottles, 200 rubles ; Rhine wine from one ruble, fifty kopeeks, to three rubles, fifty kopeeks per bottle ; Hungary wine from two rubles, fifty kopeeks, to six rubles the bottle.

Wine, spirits, and other kinds of drink, are offered for sale in great abundance at the public fairs throughout the different parts of the empire, and London porter is to be had in almost every village ; thus is a facility given to the general use of these beverages. An idea of the extent to which this species of trade is conducted, may be formed from knowing that at a fair in Nizni Novgorod, there were for sale of wine and brandy alone, a quantity worth 6,580,000 rubles, while in the wooden bazaars exclusively, were sold to the amount of 4,380,000 rubles, a ruble being ten-pence of our money. The revenue on spirits at Kazan is said to amount to 4,000,000 rubles,

the consumption of which in that city, on a feast day, is estimated at 5,000 rubles, and on ordinary days at about 1,500 rubles.* In Moscow, there are about 500 inns and taverns, 200 restaurateurs, 150 kabaks or gin shops, 80 beer houses, and 180 wine vaults.

In Petersburgh, at the corner of every street is an open kabak for the sale of spirituous liquors, not unlike the old gin shops of London. The better classes consume prodigious quantities of champagne, as well as other descriptions of wines. At dinners of respectability, rich fish soups are introduced, composed of champagne and other expensive wines, some of which have been known to cost 3,000 rubles, which at 10d. per ruble amounts to £120. No water is used in these expensive soups, and the effect on the company is frequently apparent. Both at Petersburgh and Moscow, the nobility and gentry entertain in a very sumptuous manner, and their services of plate on such occasions are costly and superb. Chancellor tells us that when he visited this empire, even so far back as the sixteenth century, the Duke of Moscovy had two cups of gold set with pearls and precious stones on a table in the middle of the dining chamber, out of which he usually drank. These cups were placed in the centre of a large table around which was a great variety of other gold cups for the nobles; among these stood four crudurces, or pots of gold and silver for holding the drink, and each fully a yard and half in height. At one entertainment given by the Duke, there were 200 persons all served with drink in golden goblets, and so numerous were the vessels of gold, that there was not room on the tables to contain them.† Though the Russians still entertain expensively, the respectable portion of the community are temperate, which forms one of the best and most striking features of their character. The young nobles and officers of the army are particularly fond of French wines, of which Champagne is the greatest favourite. It may be generally observed that the people of this empire are like their fellow men in other countries, prone alike to various vices and possessing many virtues.

In the British Empire, the distillation of spirits has been long an object of attention, both to the government and the people; but the period at which this important branch of trade originated in these kingdoms seems now not certainly known. It is indeed probable, that before the introduction of agriculture, mead or honey diluted with water, was the only strong liquor known to the inhabitants of

* Cochrane's Narrative, vol. i. p. 107.

† Chancellor's Voyage to the Northern Parts of Russia. Pinkerton's Voyages vol. i.

the British Isles. This was considered a favourite beverage among the Britons long after they had become familiar with other liquors; since the maker of mead ranked in the courts as the eleventh in dignity among the princes of Wales, and took precedence of the physician; nor could a cask of it be manufactured without acquainting the king or violating the law. According to Macpherson, cider, extracted from wild apples, was early known to the British in common with other northern nations, and when the Romans invaded England, such was the acquaintance of its inhabitants with intoxicating liquors, that intemperance and inebriety were ranked among the national vices. Eumenes, in his panegyric upon Constantius, remarks that in the year 296, Britain produced such abundance of corn, that it was sufficient to supply not only bread, but also a drink which was comparable to wine.* This, no doubt, was *ale*, the Saxon *eale*, the common drink of the Celtæ, which was known long before the Romans had extended their conquests to these islands. The manufacture had become of such uncommon importance in the year 694, that Inè, king of the West Saxons, directed that every possessor of a farm of ten *hides* of land, or, as much as required *ten ploughs*, should, among other articles, pay him twelve ambers of Welsh ale, each containing above seven gallons of English wine measure.

It is generally admitted, that the vine was first planted in Britain by the Romans, and that its cultivation became considerably extended after its introduction, but the climate not being so congenial to this plant as that of warmer countries, from which wine was so easily obtained, it never attracted that attention which, under other circumstances, might have rendered it an article of importance in the country. It wasplanted, it may be said, more as an exotic for curiosity, and the luxury of its fruit, rather than for making from it drink either for domestic or commercial purposes. Hence we learn that wine was manufactured by the monks from the grapes reared in gardens attached to the monasteries, evidently shewing that it was by a garden cultivation, rather than by a vineyard or field plantation, that this exotic was nurtured; besides, from what has been already stated, it is evident, that England is without the limits of those degrees of latitude which are congenial to the growth of this fruit; and in Camden's opinion, it was reared more for ornament than use, and if cultivated by the monks at all for the purpose of making wine, it was because they were familiar with its treatment, many of them having

* Macpherson's Annals.

come from the countries where it was a common article of culture: and they could, therefore, the more readily meet the uncongeniality of the soil and climate by their skill and attention.

It would appear that the use of wine was formerly prohibited in those religious establishments, as we find that in the year 738, wine was permitted to the monks of England, by a decree of Bishop Ardan, founder of the monastery of Lindesfern in Northumberland.*

The Isle of Ely is said, from the abundance of its vintage, to have been denominated the isle of vines; and the bishop of which, shortly after the conquest, commonly exacted three or four tuns of wine as the tithe of the vineyard, while a certain quantity was reserved in his leases for rent. But even in that island, which was the most favoured place of its culture, the growth was neither permanent nor valuable; for it appears that in seasons the produce was mere verjuice, shewing clearly that no human skill nor exertions could make the vine flourish in a country to which it was an alien.

At Roganeia, in the hundred of Rochford, a vineyard is said to have consisted of six arpents, and to have yielded, on an average, 20 modii of wine; while we are told that Gloucester excelled all other parts of England, in the abundance and pleasant taste of its grapes, and that the wine was of a superior description, little inferior to the wines of France. Windsor Park was noted for its grapes, part of the produce the king kept to himself, a part was sold for his profit, and the tithe on the whole formed a part of the living of the Abbot of Waltham, parson both of old and new Windsor. Notwithstanding these historic records, it may be asked, if the growth of the vine was natural or flourishing in England, why discontinue it, or send such sums of money to foreign countries for an article, which might be so cheaply procured at home? The answer is obvious. England is not the country for its cultivation either with respect to soil or climate, and we find that even in the times in which the vine is said to have flourished most, foreign wines were imported very largely, a proof that the home produce was very scanty, and that to prosecute the cultivation of the vine, was neither successful nor profitable. Misled by the specious reports of William of Malmsbury, Bede, Stowe, and others, many in England attempted to cultivate the vine, but without any advantageous effect; and we find in the present day that it thrives best when treated as an exotic in our gardens and greenhouses: England being a country so far north and so exposed to cold and the moisture of the great Western Ocean, that it could not

* Hollinshed's Chron. vol. i. p. 281. Speed's Chron. fol. sec. viii. p. 252.

be expected to be favourable to its culture. This is fully corroborated by the endeavours made some years since to establish vineyards in the Isle of Wight, but those efforts completely failed in consequence of the causes just mentioned.

There are, however, instances in England of the vine growing to great perfection, such as that planted in 1758 at St. Valentine in Essex, which has extended to more than 200 feet; and it was known in one year to yield 2,000 bunches of ripe grapes. The vine at Hampton palace, planted in 1769, has a stem 13 inches in circumference, with branches 14 feet long. It has produced in one year upwards of 2,000 bunches of grapes, the average weight of each bunch being a pound.*

The Romans who remained so long masters of England, and to whom wine was so familiar, must have made their British vassals acquainted with this grateful liquor; and the Saxon invaders, their immediate successors, do not appear to have diminished the prevailing taste for this luxury. Hence we find that a feast given by Hengist, about the year 450 to Vortigern, the British king, after the completion of Hide castle, that Rowena, the beautiful daughter of the Saxon chief, is represented with a golden goblet filled with wine, drinking to the health of the monarch; and this is regarded as the first instance on record of drinking healths in Britain. When the practice of drinking healths first commenced, cannot be determined, but the earliest Persian records afford many instances of it. In that country it was fashionable to drink the health of the reigning monarch in bumpers of Zabul wine, and afterwards to kiss the ground in token of respect and submission. Among the Jews, drinking healths implied either a blessing or a curse, according as good or evil was desired for the individual toasted. In the time of Homer, the practice of pledging in drinking was customary; and from the Greeks, the Romans borrowed that ceremony. At the feasts and social meetings of both the Greeks and Romans, it was a common practice to toast the healths of their respective friends, in as many *cyathi* or goblets as there were letters in the name of the individual mentioned—thus six cups were usually drunk during the reign of Augustus Cæsar, answering to the number of letters in his name, by the way of paying him divine honors. At these feasts, it was also frequent to drink to the honour of the gods and goddesses, and it has

* On the coast of Barbary, vines have been found with stems of 8 or 9 feet in girth; and in Italy, vines have continued productive for 300 years. Pliny mentions one of continued bearing for 600 years.

been reported that six hundred glasses have been quaffed on one of these occasions by a single individual. The glasses, however, could not have been more capacious than thimbles, while the time for consumption must have been very lengthened. Roman antiquarians state, that a person was appointed at every public feast or entertainment, to regulate the toasts and the quantity of the liquor to be drunk. This person was chosen by a throw of dice, and denominated *Arbiter Bibendi*, decider of drinking; and after first pouring out a libation to the gods, the guests saluted each other with the words *bene mihi*, my own health; or *bene vobis*, your health, or some such similar convivial sentiment.

Among these assemblies, each guest was obliged to keep the round or leave the company; hence the proverb "drink and begone."

To this Horace refers, but gives more license:—

> Thus every guest may drink and fill
> As much or little as he will;
> Exempted from the Bedlam rules
> Of roaring prodigals and fools.
> Whether in merry mood, or whim,
> He fills his goblet to the brim;
> Or better pleased, to let it pass
> Is cheerful with a moderate glass.*

From the Olympic songs of Pindar, we learn that an opulent father used to pledge, in the midst of his relations and friends, the youth on whom he had fixed for his son-in-law, as a public announcement of his sanction.†

From all this it is reasonable to think, that the practice of drinking healths was first introduced into England by the Romans, and not by the Saxons, who were more a savage than a polished people, little accustomed to the luxuries or refinements of civilized nations. Some suppose that the drinking of healths in Britain was of Scandinavian origin, and draw the conclusion from the writings of Snorro Sturluson, who, when speaking of the practices at the feasts of their gods, and even after the introduction of Christianity, says it was customary to drink the health of Christ, St. Michael, and other saints, in the place of Odin, Niord, and Frey, the early objects of their national idolatry.‡ This practice of the Scandinavians may be easily traced to the Greeks, by whom three cups were always taken at their meals; the first dedicated to Mercury, the second to the Graces, and

* Horat. Sat. Lib. ii. s. vi. v. 67.

† Pind. Olymp. 7.

‡ Henderson's Iceland, vol. ii. p. 67.

the third to Jupiter. Besides these, they drank healths to all their tutelary deities; to Mercury, the god of sleep, on going to bed, in order to have pleasant dreams; to Jupiter, as their great preserver; and to the other gods in their respective superintendencies. The Greek Scholiasts affirm, that in taking a cup or glass, it was customary to name a friend, and having drunk his health, to pour a portion of the liquor on the ground, repeating his name a second time in token of high regard. Apuleius tells us that drink was taken not only in remembrance of the dead, but more particularly in honor of fellow-soldiers, whose memories were toasted out of golden cups in honor of their valorous actions—hence perhaps the origin of the modern custom of drinking in solemn silence to the memory of an exalted or venerable character. A drink called *wassail*, a word compounded of *waes*, wishing, and *hael*, health, implying the wish of good health, seems to convey an idea of the origin of this practice, which was once very common in England. At Christmas, it was customary for young persons to go about with a large bowl of liquor, drinking healths. This beverage was a preparation of ale, made by the admixture of spices, apples, sugar, and other ingredients, and denominated wassail, while those who served it were called *wassailers*, which at length became the common appellation for topers and drunkards. Thus Shakspeare—

> "The king doth wake to-night, and takes his rouse,
> Keeps *wassail*, and the swagg'ring upspring reels."

Baily says, this drink was customary among the monks of St. Albans, and usually placed before the abbots, to drink the health of their fraternity.

It appears from the most authentic accounts of the earliest settlement of the Saxons in Britain, that wine was familiar among them, yet it was not used with profusion. A great bowl of wine from which the *obbæ*, or big-bellied jugs of the monks, were filled twice a day, for their dinner and supper, was all that Ethelwold allowed to the entire inmates of his monastery; and at festivals, a *sextarium* of mead was the quantity distributed among six of the brethren at dinner, and among twelve at supper. On certain occasions, such as one of the great high feasts of the year, a measure of wine was allowed. The favourite drinks of these people were ale and mead; and in the well-known dialogues preserved in the Cotton library in the British Museum, and quoted by Turner, in his history of the Anglo-Saxons, where a youth is questioned as to what he drank, he replied, "ale if I have it, or water if I have it not. I am not so rich that I can buy me wine, and wine is not the drink of children but of the

elders and the wise." Of ale, indeed, there were at that time three sorts, but these were merely modifications of the same beverage. Pigment, morat, and cider were in use. The first of these liquors was sweet and odoriferous, being made of honey, wine, and spices of various kinds; while the second was made of honey diluted with the juice of mulberries; and the third was prepared from such fruits as the country afforded. It was customary, however, to use pure wine without any mixture of spices, but to serve the spices on a plate by themselves, which were taken after the wine as a stomachic.* The pigment, or pimint, as it was called, was rather a medicinal preparation of the wine, made and sold by the apothecaries who were styled *pigmentarii*, from which it took its name. During these times, it would appear to have been a custom among the Saxons that when dinner was over, and the dishes removed, they continued drinking till the evening.† Wine was used, and the stronger it was, the more it was desired. In old times, the best was called *Theologicum*, because it was obtained from the clergy and religious men, to whose houses many of the laity would often send for bottles, being sure that they should not be served with the worst sort, as the vintners would have thought that their souls would go to the devil if they served the clergy with any but the best.

At entertainments among the Britons, the gentry sat in the centre of the hall around a table, behind whom the attendants, or guards, formed another circle. When dinner was over, the principal person called for a cup of ale and pledged the guest on his right; the same cup filled to the brim was drunk by each person in succession, the attendants at the same time regaling themselves behind. Women were admitted and highly honoured on those occasions; but they always retired before intemperance commenced. In the reign of Edgar, drinking was so prevalent, and carried to such excess, that a law was enacted that no man should drink beyond certain nicks or marks made in the pots and sometimes pins for the purpose of limiting the potation :‡ hence the phrase, that when an individual had become jolly, he was said to be in a merry pin, having the limits assigned to temperance; and we are told that a whole company drank out of a single vessel handed from one to another, such being the practice of those times.§ Pledging each other in drinking was another

* Mill's Hist. of Chivalry, vol. i. p. 169, note.

† Turner's Hist. Ang. Saxons, vol. ii. chap. iv. p. 51, &c.

‡ Basil Kennet's Hist. England, vol. iv. p. 91.

§ William of Malmsbury, B. ii. p. 31.

custom and is said to have had its origin from the death of Edward the Martyr, who was murdered by the treachery of his step-mother, Elfrida. The meaning of a pledge was a security for the safety of the individual drinking, who all the time was exposed to the attack of an enemy, his arm being raised to his head, his face partly covered, and his body unprotected. When, therefore, a person was about to drink, he addressed the guest next him to know if he would pledge him, and being answered in the affirmative, the sword or dagger of his companion was raised to protect him while drinking.* So debased was the conduct of the Danes in England during the reign of Edgar, and so addicted to inebriety were they, that their bad example induced that monarch, by the advice of Dunstan, Bishop of Canterbury, to put down all the alehouses, excepting one in every village or small town.

The Norman conquest greatly contributed to the progress of civilisation and refinement, by the introduction of all the improvements and discoveries known among the French, Italians, Greeks, and Saracens: hence the Normans, on their invasion of England, called the inhabitants barbarians, and so great was their superiority in civilisation, that William of Malmsbury tells us that one of the great distinctions between the Britons and Normans was, that the latter built magnificent and stately castles, whereas the former consumed immense fortunes in riot and hospitality while residing in mean dwellings. Much refinement and knowledge were also introduced into England by the means of the crusades; and it has even been stated, with every probability of truth, that the art of distillation was made known in England so early as the time of Henry the Second. During the reign of Henry the Third, in 1256, the manufacture of ale had become of such consequence, that the price of it was fixed in proportion to that of corn or wine, and a brewer might sell two gallons of it for a penny in cities, and three or four for the same price in the country.†

In 1302, barley-malt rated at 3s. 4d. per quarter, and from the cheapness of wheat, the brewers malted that grain also. The beer made from barley was 3d. or 4d. a gallon, while that from wheat was but 1½d., wheat being then only about 2s. the quarter.‡ This caused a proclamation prohibiting the malting of wheat, lest it should prevent the encouragement of its growth for bread, and give the advantage to corn and other inferior grain. The Chronicles of Rymer shew that in 1504, ale sold for about 3d. and beer for 2s. 4d. a gallon. The

* Strutt's Manners and Customs of the Ancient Britons, vol. i. p. 49.

† Hume, vol. ii. p. 333.

‡ Vide Fleetwood's Chronicon Preciosum, p. 75.

method of making this liquor, as practised by the ancient Britons and other Celtic nations, is thus described by Isidorus and Orosius: "The grain was steeped in water and made to germinate, by which its spirits were excited and set at liberty, it was then dried and ground, after which it was infused in a certain quantity of water, and being fermented, it became a pleasant, warming, strengthening, and intoxicating beverage." The reader will perceive that this is the same drink described by Pliny, and mentioned in the early part of this work, as common to the several nations in the West of Europe. The grain usually employed in its manufacture was barley, but wheat, oats, and millet were sometimes used.* In Arnold's Chronicle, published in 1521, may be seen a receipt for making beer, which is nearly as follows:—"Ten quarters of malt, 2 of wheat, 2 of oats, with 11lbs. of hops, for making 11 barrels of single beer." The ancient Welsh and Scots had two kinds of it, called *common* and *spiced* ale, and the value of each was thus determined by law:—"If a farmer hath no mead, he shall pay two casks of spiced ale, or four casks of common ale for one cask of mead." By this statute, a cask of spiced ale, nine palms in height and eighteen in diameter, was valued at £7. 10s. of our present coin; and a cask of common ale of equal dimensions at about £3. 13s. of the same currency. At this period, common ale was an article of such luxury among the Welsh, that it could only be procured by the great and opulent. Previous to the introduction of Christianity, this liquor was in such repute, that the Saxons and Danes believed that "to drink large and frequent draughts of it was one of the greatest pleasures enjoyed by the heroes admitted into the hall of Odin."† Meetings were formerly held in England for the express purpose of drinking ale, denominated Scot-ales. One of these called *give-ale*, seems to have been a remnant of Anglo-Saxon superstition. These drinking bouts were sometimes held in public-houses and sometimes in the church or church-yard. The expense of a Scot-ale was defrayed by joint contribution; and when held in taverns, the clergy were not allowed to be present. There were occasionally common drinkings termed *leet-ale*, *clerk-ale*, *church-ale*, and *bride-ale*, the last of which still prevails in Scotland under the name of penny bride-ale, a practice intended to assist those who are unable to defray the expense of a wedding-dinner.‡ In some parts of Germany, similar superstitious customs long prevailed. On making an additional window to a new

* Henry's History of England, vol. ii. pp 361-2-3-4.

† Mallet's Northern Antiq. chap. iv. Antiquarian Repertory.

‡ Supplemental vol. Encyc. Britannica.

building, or altering an old one, was the Fensterbier (window-beer), a festivity of drinking and dancing. At the dinner after the ceremony of baptism, the mother was presented by the male sponsor with a glass of wine and a piece of money, to relieve her from the beer-soup, the sole aliment which she was permitted to taste during her confinement. At the churching of women, was also a boozing-match termed Karkbier (church-beer), and weddings had their concomitant indulgences, though not designated by any particular name. Funeral solemnities were attended with the Grabbier (sepulchral-beer), malt potations appearing to have formed an essential part of all ceremonial observances.* At the feasts and entertainments given in England in those times, the consumption of ale and wine was very considerable. Three hundred tuns of ale and one hundred tuns of wine were consumed at the installation of George Neville, Archbishop of York, in the year 1466. Much of the wine on those occasions was warmed and mixed with spiceries, and used at breakfast, as well as at other meals. Great families took four meals a day, breakfast at seven, dinner at ten, supper at four, and livery, a meal now unknown, between eight and nine in the evening. They sat at dinner from ten in the morning till one in the afternoon, by which indulgence three of the best hours of the day were wantonly consumed. The side-boards were always well supplied with beer, ale, and wines, which were served in pewter and wooden cups. A quart of beer and a quart of wine for two individuals were the allowance at the morning repast; and at the liveries, or evening collations, a gallon of beer and a quart of wine. The custom among shop-keepers, mechanics, and labourers, was to breakfast at eight, dine at nine, and sup at six.

In the time of Elizabeth, ale was so common in England, that it was used at breakfast in conjunction with animal food with the same familiarity that tea is now used with bread and butter. Houses for the sale of this beverage were first licensed in England in the time of Edward the Sixth, by an act of the 5th and 6th of that monarch. In 1603, by a statute of James the First, the power of licensing inns and alehouses was granted by letters patent to certain individuals, in which it was enacted, that no victualler could sell less than one full quart of the best ale for one penny, and two quarts of the smaller sort for the same. In 1643, in the reign of Charles the First, a tax was laid for the ensuing year on beer and ale, calling it by a new name *Excise*, a word, some say, borrowed from the Belgic *accüsse*, which signifies *tribute*.

* Letters from Mecklenburg and Holstein, by George Downes, 8vo

As great abuses were at first committed under the mode by which this branch of revenue was collected, it was soon after placed on the same footing with that of the other branches of excise.* This duty, however, was not very productive, as appears from an abstract of the money raised in England for a period of nineteen years, viz. from November the 3d, 1640, to November the 5th, 1659, during which the whole amount of wine-licenses is rated at £312,200. In 1663, the amount was £20,000; in 1688, £10,000.† About this period, the ale and beer brewed in England came, on an average of some years, to 4,950,413 barrels of strong, and 2,254,006 barrels of small beer annually. In the year 1691, the quantity brewed by the common brewers in the city of London and its suburbs, amounted to 1,222,764 barrels of strong beer and ale, and 865,831 barrels of small beer.

The duty upon these articles being doubled in that year, it set a number of private brewers to work, which so affected the licensed brewers, that in the year 1695, the annual quantity of strong beer and ale was reduced to 909,299 barrels, and the small beer to 813,824 barrels. In 1724, the quantity of strong beer brewed in London and the neighbourhood was 1,172,494 barrels, and of small beer 789,495 barrels, while in the whole kingdom the strong beer was computed at 4,075,871, and the small beer at 2,465,695 barrels.‡ For further satisfaction the reader may consult the Tables in the Addenda in which he will find an account of the beer and ale brewed in England, for certain periods from the year that the excise on that article was put under the management of Commissioners in the time of James II., and embracing portions of the reign of William III, Anne, George I., II., III., IV., and William IV. In 1822, there were in London 98 brewers and 37 licensed victuallers, who brewed 2,000,932 barrels, of which 1,673,603 were strong, and 327,329 table beer.§ In the rest of England were 1488 brewers and 20,575 licensed victuallers, who brewed 5,547,875 barrels, of which 4,345,015 were strong, and 1,202,860 table beer. From the 5th January, 1829, to 5th January, 1830, there were brewed in the London district 1,521,064 barrels of strong, and 261,824 of table beer; while in the country there were made 4,483,724 barrels of strong, and 1,118,643 of table beer.‖ The number of brewers in London in 1836, were 106 common brewers,

* Sinclair's Hist. Revenue, p. 208. † Ibid. pp. 261, 268.

‡ Maitland's History of London.

§ Parliamentary Paper, No. 571, Sess. 1823.

‖ Parl. Paper, No. 191, 25th March, 1823.

and 25 victuallers, with 130 persons licensed for general sale; who brewed all they sold. In London and throughout England, the consumption of malt was:—

YEARS.		BUSHELS.		BUSHELS.
1832,	London	4,462,915	England	25,884,159
1833,	.....	4,777,134	.....	26,796,973
1834,	.....	5,392,244	.....	28,944,723
1835,	.....	5,404,682	.....	29,897,333
1836,	.....	5,907,951	.....	30,921,797*

In the whole of England, for the year 1836, there were 2,099 licensed brewers. The victuallers were 54,551, besides 36,536 victuallers licensed to sell on the premises, with 4,118 victuallers licensed not to sell on the premises.

The use of malt liquor, some are of opinion, was not introduced into England before the time of Henry VII. in whose reign the breweries, or beer-houses, as they were then termed, were twice put down by the legal authorities, either for selling without license or for making the liquor too weak. By an act of Henry VIII. in 1532, only two descriptions of beer, strong and double, were permitted to be manufactured, the strong fixed at 6s. 8d. and the double at 3s. 4d. the barrel. The public demand increasing yearly, induced the brewers to advance their prices contrary to the statute, so that in 1591, the government ordered that the brewers should sell at the prices fixed by law. The Brewery Company which was incorporated in the time of Henry VI. 1438, remonstrated on the hardship of being obliged to dispose of an article at a rate far below its value, every material employed having considerably increased in price from the time of passing the statute. Notwithstanding the enactment, the consumption continued to increase, and during the time of Elizabeth, the export of beer had become a valuable branch of commerce. The Queen herself, in her right of *purveyance*, a prerogative then inherent in the crown, caused considerable quantities of beer so obtained to be sold on the continent for her own emolument.

The sovereigns of England had the prerogative of purchasing necessaries for the support of the royal family at an appraised value, even without the consent of the proprietor. This inquisitorial privilege was known by the names of purveyance and pre-emption; but it became at length so disagreeable to the people, that the right was abolished and the *Excise* was established in its stead by the Long

* Vide Parliamentary Paper, 1837.

Parliament in 1643, and afterwards made hereditary to the crown.* This import is supposed to have been originally planned by a Mr. Pim, and was at first laid on spirits only. The customs were also an ancient prerogative of royalty, and at first consisted of small sums paid for the accommodation of warehouses, weights, and measures, with some small duties levied as fines and tribute for the liberty of trafficking. Besides these means of subsistence for the regal household, in some of the early reigns, deficiencies were frequently supplied by tyrannical exactions, and by a voluntary contribution entitled a *benevolence*. Edward I., when about to engage in a war with France, had recourse to the latter expedient, and summoned the wealthiest persons in his dominions that he might obtain sufficient assistance. The money raised in this way was sometimes very considerable, for, being given spontaneously, it was often munificent. Interesting incidents are related respecting such donations. Among these, it is stated, that the monarch just mentioned, applied personally to a rich widow, who, though advanced in years, was so charmed by his agreeable manners and handsome person, that she answered his request saying, "By my troth, for thy lovely countenance thou shalt have £20!"—With which the king was so much pleased, that he gave the old lady a kiss, and she was so delighted with this mark of royal condescension that she added £20 more to the benefaction. Though *Benevolences* were annulled by Richard III. yet Henry VII. endeavoured to raise money by that impost.

The duty first imposed on beer in 1660, by the 12th Charles II., and granted to him for life, was two-shillings and six-pence per barrel for strong, and six-pence for table-beer, at the same time that a duty was laid on wine as well as on wine licenses: this revenue was farmed till 1684, when it was placed under *Commissioners*. For some years previous to that time, it was managed by George Darkwood and partners. In 1688, the excise on this article, clear of all deductions, amounted to £666,383.† By the 5th of William and Mary, in 1694, the duties were raised to four-shillings and nine-pence on strong, and one-shilling and three-pence on table beer; but the products were not so great, and they afterwards continued to fluctuate according to the change of the duties. The increase of population and the habits of the people have now rendered the consumption of this beverage prodigious, and notwithstanding that the duty was 10s. on every barrel exceeding 16s. and 2s. on every barrel of 16s. or under, the net

* Sinclair's History of the Public Revenue of the British Empire, p. 34.

† History of the Revenue, p. 281.

amount of revenue for the year 1821 came to £2,549,620 18s. 9½d,* and the average annual produce for the eight succeeding years was £3,259,439.

In 1504, ale was sold in England at 3d. per gallon, and it was about twenty years after, that *hops* were introduced, which event is thus noticed by one of our writers:—

"*Hops*, reformation, bays, and *beer*,
Came into England all in one year."

Another version of this distich is,—

"Hops and turkeys, carp and beer,
Came into England all in a year."

Which latter is considered the more correct. As the first version in which allusion is made to the Reformation, would fix the introduction of hops to Henry the Eighth's time, this error seems palpable, the use of this plant in brewing being well known long before, although it appears to have been unknown to the ancients as a preservative of beer, nor have we any account of their having employed any other substance as a substitute.

Hops were used by the brewers in the Netherlands early in the fourteenth century; and the use of them in malt liquor was brought into England from Artois. Some say, though perhaps incorrectly, that this circumstance first gave that drink the name of beer, to distinguish it from the softer and more ancient malt liquor called *ale*. Yet it is certain that beer, as a beverage from malt, was known and used under that name long before; for, previous to the Norman conquest, brewing was a business of some consequence in London. The word ale is derived from the Saxon *eale*, and *beer*, according to some philosophers, is from the Welsh *bir*; but its natural origin appears to be from *bere*, the Celtic term for barley, the grain from which it was first produced. The planting of hops was prohibited in the reign of Henry VI., and brewers were forbidden to use them in ale by an edict of Henry VIII. In the 5th year of Edward VI.† privileges were granted to *hop-grounds*, and lands were set apart for their cultivation, so that their praises were celebrated by a poet in the following couplets:—

"The hop for his profit I thus do exalt,
It strengtheneth drink and it flavoureth malt;
And being well brewed, long kept it will last,
And drawing abide, if you draw not too fast."‡

* Parl. Paper. † 5 & 6 Edw. 6, c. 5.

‡ Tusser's 530 Points of Good Husbandry, 1557.

In the reign of James I.,* hops were cultivated to some extent in England, but not in such quantity as to supply the demand, since, in 1608, a statute was passed against the importation of bad hops. The great supply, however, was drawn from abroad until 1690, when, to increase the home plantations, a duty of 20*s.* per cent. over and above all other charges, was put upon what was imported; and in 1710, the duty of one penny per pound was imposed upon all hops reared in England, and three-pence on foreign hops.† Having been so circumstantial in the history of hops, it may be naturally enquired of what service they are in brewing, and what was substituted for them previous to their introduction. The answer requires little research. Experience has proved the salutary effects of bitters on our digestive organs; and hence the use of hops in malt liquors, as they seem to diminish their noxious effects, prevents them from becoming sour, invigorates the stomach, and promotes digestion. Valuable as they are in malt liquors has been found, yet, like the introduction of any novelty, they were opposed, and in particular by the citizens of London, in a petition to parliament as a nuisance, in common with Newcastle coal. The one as spoiling the taste of the drink and endangering the health of the people, the other as offending by its disagreeable smell and injurious effects.† Previous to the use of hops, ground-ivy, called alehoof or tunhoof, *(glechoma hederacea)* was generally employed for preserving beer. The ale, says Parkinson, in his Theatrum Botanicum, published in 1640, which our forefathers were accustomed to drink, was a thicker drink than beer, but left off since hops were added, as they altered the quality and made it more healthful in preserving the body from the repletion of gross humours which the ale engendered. The hop, *(humulus lupulus,)* as an ingredient in our malt liquors, is found to possess in itself, elements of activity which other materials that have been employed in its stead, do not possess, combining the properties of astringency, bitterness, and aroma. Besides narcotic and diuretic principles, it imparts to the beverage a tonic quality and an agreeable flavour, modifying the bitterness with a warm and stimulant property. The application of this vegetable is to remove from the beer the active principle of its fermentation, for which purpose a certain quantity of hops is boiled with the wort, before it is set to ferment, and no other material has yet been found capable of supplying its place, as its essential oil conveys a pleasing

* Hume, vol. vii. p. 242.

† Anne, c. 12.

‡ Blithe's English Improver Improved, 3rd Ed. 1653.

flavour, and prevents the fluid from running into the acetous or putrid fermentation. The brewers about Paris are said to use buxinia, (an extract from boxwood,) as a substitute for hops, and which is said to possess a powerful, bitter, and sudorific principle. Quassia and other bitter materials that have been tried to supply the place of hops, are both hot and unpleasant, and as they contain no saccharine matter to produce spirit through the vinous fermentation, they add nothing to the real strength or richness of the liquor; besides, they are wholly destitute of the aromatic flavour which the hops impart, and incapable of communicating that fine, full, and bitter quality, so much prized by the lovers of beer, ale, and porter. Quassia, a tree of Guiana, and so called in honour of a drunken doctor, a negro named Quassia, who discovered the virtue of the wood in curing malignant fevers, is a bad substitute for hops; for though sufficiently bitter, it wants astringency, and other properties, particularly those which are sufficient to precipitate the vegetable mucilage or gluten. Gentian is little better, though it has been used in this way from a remote period. This plant is said to have received its name from Gentius, King of Illyria, who first discovered its medicinal qualities 167 years before the Christian era. Common mugwort *(artemisia vulgaris)* and water trefoil *(menyanthes trifoliata,)* have also been tried and found equally deficient in the hop principle.

Wormwood, before the hop acquired so much estimation, was employed as a preservative for ale and beer; many preferred the flavour it imparted to that given by the hop. The French distil it, and manufacture it into a liqueur that is greatly admired,* but its value as a bitter in malt drink can never supersede the virtue of the hop. Horehound has also been made use of as a succedaneum when hops were dear. Besides the articles already mentioned, there are many plants, which yielding bitter astringent juices, are, or might be, substituted for hops. In Sweden, Norway, and the Highlands of Scotland, heath *(erica,)* and common broom were used in some places, and are still occasionally employed for a similar purpose. In certain parts of France and Germany, nothing but broom-tops is resorted to; and in Guernsey, the *teucrium scordonia* serves perfectly well to answer the intention. English hops are accounted preferable to those of the Continent, as they possess more *gallic acid* and *tannin*.† Kent, which has been denominated the *hop-garden* of

* The Japanese, according to Thunberg, (vol. iii. p. 71) use the leaves of wormwood for tinder. They are so prepared as to form a material of a brownish colour, which is easily ignited.

† Paris's Pharmacologia, vol. i. p. 311.

England, is considered to yield the best. Among these is a peculiar species much esteemed by porter-brewers, and is the produce of the *Humulus Germanicus*, a plant well known in other parts of Europe. As a substitute for hops, a bitter wood was, at one time, imported from Jamaica, particularly when there was a scarcity, which was sold so high as £80 the ton; but being vastly inferior to hops, the government put such a duty on it, that it operated as a prohibition. Though some brewers use birch-bark, and others that of the common oak, *(Quercus Gallus)* yet it is not for the preservation of the drink, but because these materials, containing much tannin and other astringent matter, imbue the liquor with a rough, bitter flavour essential to its composition. It is to be regretted that either from want of knowing how to obtain the right flavour from malt and hops, or from avarice and to vend a spurious for a genuine article, many brewers, regardless of the laws, use deleterious ingredients, either for the sake of colour, taste, or strength, or to economize malt and hops. Spanish liquorice properly employed, gives colour, flavour, and richness. *Cocculus Indicus*, or what is called the *black extract* made from the berries, which gives a fictitious strength highly pernicious, causes head-ache, and other dangerous affections. *Nux-vomica*, a species of poison, and the berry of a tree indigenous to Ceylon and the Coromandel coast, is also used. Dr. Fleming says, that the Hindoos of Upper India are in the habit of adding it in the process of the distillation of arrack; and Roxburg, in his Botany, says that it is added in order to render the spirit more intoxicating. The fruit from which the seeds or real Nux-vomica of the shops is obtained, is about the size of a large apple, having a round, smooth, hard, shell of a rich orange colour. When ripe it contains a soft jelly-like pulp, containing the seeds from two to five in number, which are flat, nearly round, an inch broad, and about one-eighth of an inch in thickness. The pulp is considered perfectly harmless, as it is eaten eagerly by many sorts of birds, and the root is used for the cure of native intermittent fevers, and the bite of venomous snakes: such is the drug which is too often incautiously used by some of our brewers! *Capsicum*, a very hot pepper, although employed to give warmth and briskness to the liquor, is not deleterious, but, on the contrary, wholesome, and a safe corrective of flatulency. Salt of steel, and sulphate of iron *(copperas,)* are improperly substituted for this ingredient, and have the effect of giving a fine head and colour to porter. *Grains of paradise*, as well as capsicum, either in their natural state, or in the form of a concentrated tincture, are used for imparting pungency to beer. *Ginger-root*, *coriander-seed*, and *orange-peel*, are employed as flavouring sub-

stances ; *alum*, and sometimes *oil of vitriol*, are resorted to for the purpose of giving it the relish of age.

Hops yield a crop of great uncertainty, and are attended with much risk to the contractor, for which reason although this plant appears to give encouragement to agriculturists, from the fact of 45,662½* acres of land being devoted to its growth in England, yielding at an average, 20,000,000lbs. annually, yet there might be policy in giving up the duty on it altogether, as this measure might induce brewers to employ nothing else in the manufacture of their beer, which they have often been compelled to do from the high impost, at least that has been urged as a reason for doing so. The duty on hops, previous to the year 1801, was only a penny per pound, or 9*s.* 4*d.* the cwt., but since that date it has been two-pence a pound, or 18*s.* 8*d.* the cwt. The gross of this article for 1821 was £241,303. 4*s.* 2½*d.* and the net amount £221,372. 17*s.* 11½*d.*† In 1831, there were 43,500 acres of hops under cultivation, and the average of the duty for that and the preceding year was £280,182. In 1835, the duty averaged £409,055 18*s* 2*d.*

The trade in malt liquor in England employs an immense capital, since, besides what is consumed in the country, large shipments are annually exported. In a Table in the Addenda, in which the exports to India and China are stated, will be found an account of the quantities of this commodity sent to those countries. The following is the aggregate of the exports of strong beer to different parts of the world for ten years, viz. :—

YEARS.	BARRELS. Imperial measure.	YEARS.	TUNS.
1826	53,013	1831	8,884
1827	42,602	1832	11,330
1828	59,471	1833	11,629
1829	71,842	1834	10,405
1830	74,902	1835	12,880

The brewing of porter, a drink which chiefly differs from ale and beer by being made with higher dried malt, commenced some time about the year 1722. It was then the common practice in taverns to call for a pot of *half-and-half*, meaning half ale and half two-penny, sometimes an equal portion of ale, beer and two-penny was demanded called *three threads*. To avoid all this trouble of drawing these liquors from their respective casks, a person of the name of Harwood

* Parl. Paper, 1822, No. 282.

† Finance Accounts, 1822, p. 48,

formed the plan of brewing a drink that would answer every purpose, and partake of the same flavour united. He effected his object, calling the beverage *entire*, or *entire butt*, because it was taken from one butt or vessel; and from being purchased by porters and such like persons, it was ever afterwards distinguished by the name of *porter*.

In the manufacture of this liquor, the English have not been excelled by any other nation, although it is imitated in most of the countries of Europe. Popular opinion will have it that the water of the Thames is superior to any other for the making of porter, but Mr. Richardson alleges that this is a mistaken idea arising from vulgar prejudice, since it is indisputable that other water makes malt-drink equally good, and some of the principal brewers find the New River water as serviceable. The specific gravity of the former is 1000.3, and its spissitude 1000.182, while the specific gravity of the latter is 1000.8, and its spissitude 1000.344.*

It is said that the annual quantity of porter brewed in London exceeds 1,316,345 barrels of 36 gallons each; and that the consumption of porter and ale in that metropolis amounts to 2,000,000 of barrels and upwards. This vast supply is chiefly drawn from the breweries within the city, which, in respect to size, style of building, and ingenuity of operations, are not surpassed, nor indeed equalled by any other establishments of the kind in the world. Some idea of their magnitude may be formed from the brewery of Messrs. Barclay, Perkins, and Co., once the property of Mr. Thrale, the friend of Dr. Johnson. This concern occupies a space of about ten acres in area, and the buildings which contain the vats are of extraordinary dimensions. There are upwards of 100 of these vessels on the premises, the average content of each being 4,000 barrels, and the fermenting tuns are also so capacious as to contain 1,400 barrels severally. There are, moreover, three copper boilers holding respectively 150 barrels. The machinery of the establishment is worked by two steam-engines, one of which is twenty-two horse power, and the produce of the liquor is from 3 to nearly 400,000 barrels; while the malt consumed in a year exceeds 100,000 quarters, and the hops upwards of 3,000 bags. It gives employment to at least 200 persons on the premises and in various other ways to almost twenty times that number, while 160 horses belonging to the proprietors are constantly engaged in conveying materials to and from the brewery. As a matter of novelty, five and twenty gentlemen dined in one of the coppers, and when they had retired, fifty of the workmen went into

* Vide Treatise on Brewing.

it and regaled themselves at the same table. His Majesty George III. partook of an entertainment in a similar manner, given in one of the tuns in Whitehead's establishment, which was conducted on a magnificent scale suited to the dignity of the Royal visitant. This need not appear incredible, since the vats in these concerns are of most enormous size. One for holding porter in Meux's brewery is $65\frac{1}{2}$ feet in diameter, and $25\frac{1}{2}$ feet in altitude, containing 20,000 barrels, giving a surface of 3,370 square feet, equal to a room of $58\frac{1}{2}$ in each of its lineal dimensions, and competent to accommodate nearly 100 persons at dinner. In 1814, one of the large vats in this establishment burst, from which the porter rushed with such impetuosity, that the adjoining streets resembled rivers, and the surrounding houses were so filled with the liquor that eight persons were drowned amidst the multitude who were making their escape from its ravages. Domestic brewing is carried on throughout the country in various degrees of extension; the farmers brew for their own use even to half a bushel of malt. The manner in which this home manufacture is conducted will be best comprehended by the following detail of the process: The apparatus generally consists of a rum puncheon cut into two unequal portions, forming vessels of different capacities; the smaller serves as an underback, and the larger for a mash-keive and fermenting tun. Two or three tubs, about the size of mashing-tubs, are employed as coolers or as receivers of the worts from the keive. The boiler is usually either a large pot or copper cauldron. The keive is set in a block or stool in such a position that the run from it must fall into the underback from the spigot, and when a perforated piece of tin or copper cannot be had to cover the hole through which the worts run, a bunch of birch-twigs like a besom, is placed over it to prevent the grain from being carried off with the liquor. During this preparation for the brewery, the water for washing is kept boiling in the copper from which it is poured into the keive in sufficient quantity to answer for the first running. The necessary heat of this water is ascertained by suffering the steam to subside, so that a person looking into the keive can see his image reflected from the surface. If mashing is commenced at a greater heat, experience has shown that it would become thick like pudding and not run off. When the water in the keive has come to the temperature just stated, the malt, consisting of about three-fourths or seven-eighths of the whole quantity, is gently poured in, being first well bruised between cylinders, the person in attendance taking care to mix or stir it briskly while throwing it in, so as to prevent it getting into lumps. Too much caution in this respect cannot be observed, as much of the extract depends on the proper mixing of the

grain with the water. When thus mixed the residue of dry malt is lightly scattered over the top or surface of the keive, and then the whole is covered with sacks or a lid to preserve the heat, and the better to saturate the malt. In this state it is allowed to stand for three hours, at the end of which the spigot is drawn partly out in order to obtain a portion of the liquor to know if it be sufficiently fine; if not, further time is given, and it is successively tried until it is found to be quite clear, when it is run into the underback. At this stage, the hops, consisting of about $1\frac{1}{4}$lbs. are laid loose either in the vessel or in a bag, while the water in the meantime is preparing for a second mash. The heat of this water ought to be of a higher degree of temperature than that used in the first mashing, the spigot being secured at the bottom of the keive, the water is admitted when another mixing takes place. The keive is again covered and allowed to stand about two hours: during this operation, the produce of the first brewing is kept boiling in the copper, to which it was immediately conveyed, along with its proportion of the hops, after the commencement of the second mashing. In order to ascertain when the worts are sufficiently boiled, a small quantity is taken out, and if flakes are seen to be suddenly precipitated to the bottom, the process is considered completed; but an error can scarcely take place by its boiling too much, for, if not well boiled, the liquor will never appear fine in the glass. The worts of the second mashing being collected, are boiled in the same manner, but for a shorter time, as there is less glutinous matter to separate. After the first worts are boiled, they are strained through a sieve, &c. When cooled to a blood-heat, a small quantity is put into the fermenting tun with the addition of some barm. As soon as fermentation commences, the worts are kept adding in small quantities, until all is poured into the tun. Care is necessary to preserve the fermentation in a proper state, for if too cold, it would cease altogether, and if too hot, the drink would be flat and without briskness, but if properly managed, it would preserve a fine body and show a sparkling in the glass: about sixteen hours accomplish all the purposes of fermentation in the tun, when the barm at the top is skimmed off and the liquor drawn into a barrel previously well cleansed and dried. The barrel should be filled to within an inch of the bung to give room for further working, and it should be filled so close to the bung-hole, that all impurities should get leave to escape through it. A small quantity ought to be kept out to fill up the vacancy in the cask occasioned by the working. When the fermentation has subsided, the bung should be merely laid on the bung-hole, afterwards the cask slightly bunged, lest it should burst, and when the fermenta-

tion has completely ceased, it is closely bunged and fit for drinking. The produce of the second mashing is treated in the same way as the first, but the drink is considerably inferior; if a third mashing take place, some add a couple of pounds of either raw sugar or molasses, which produce a tolerably good small beer. Allowing a bushel and a half of malt to cost 9*s.* 4*d.* and the hops employed 1*s.* 6*d.*, the amount of such brewing would be worth 10*s.* 10*d.*, and taking the produce at 10 gallons of strong, and 14 gallons of inferior beer, the average price for each gallon would only be about $5\frac{1}{4}d.$ per gallon for a good and wholesome beverage, and much superior to what is to be had in the common taverns at 3*d.* per quart. Another mode of brewing on a small scale for domestic purposes has been thus described:—A porter barrel set on end, having the upper head removed, perforated with gimlet holes, and placed on brackets within about three inches of the real bottom. Between these two bottoms a cock should be placed to drain off the liquor. Another barrel will answer the purpose of an underback to receive the worts as they run off. A tin boiler with a cock at the bottom, covered inside with a grating to prevent the hops from running out, will serve the purpose of heating the liquor for the mash, as well as for boiling the hops. Fifteen gallons of boiling, and five of cold water, are to be thrown into the mash-tun, to which two bushels and a half of ground malt are to be added. During these operations, a person is constantly stirring the malt and water, and should continue to do so for half an hour. All this time it would be well to keep the barrel covered with some folds of linen to prevent the escape of heat. In the course of an hour, the cock may be opened by degrees, the liquor will then run clearly, and when all has been run off, 20 gallons of water almost boiling, is to be poured over the residuum and allowed to percolate, so as to wash down the worts remaining. The total amount of worts obtained may be reckoned at 23 gallons. The wort is then to be boiled for about twenty minutes, with $3\frac{1}{4}$lbs. best hops, then drained off, cooled to about blood-heat, or 98° of temperature, when after the infusion of a quart of good yeast, the fermentation commences, and is encouraged till its completion. When the fermentation shows a tendency to go down, the liquor is racked off into a cask closely bunged, and in about a month it is fit for drinking.

In Staffordshire, Shropshire, and Warwickshire, as well as in the midland counties, it is a common practice for women to brew, and many of them follow it as a means of livelihood, going from house to house, as the wants or the calls of the farmers, or victuallers, require. This has been the practice for centuries:—hence the term "*ale-wives*,"

as recorded in several of the old statutes. Those who are in the practice of constant brewing, whether for the supply of their own tap rooms or for those of their neighbours, have commodious apparatus for the purpose, with a thermometer and other scientific instruments; and brewing in England may be said to have arrived at a degree of perfection unknown in other countries.

The ingredients for making a good strong keeping ale, should be in the following proportions—40 bushels of best pale malt to 50lbs. of hops. For the first mash 10 barrels of water at 172° may be let on, and raked for half an hour, water at 180° may then be poured in, so as to pass through the malt and to wash away all the worts previously soaked in the mash. These liquors, when boiled down with the hops, fermented and finished, ought to produce 8 barrels of ale at 100lbs. gravity on Dicas's Saccharometer, although what remains is inferior to what has been previously obtained. The same malt and hops will, however, serve for making table-beer. With this view, a second mashing may be made with water at the temperature of 185°, and even a third mashing, at a temperature of 190°, the quantities being such, that after boiling on the same hops, fermenting, and finishing, there will be 12 barrels of beer, at 30lbs. gravity.

A good description of ale may be procured from 40 bushels of prime pale malt and 30lbs. of good hops. The temperature at mashing may be as already stated, and it may be calculated to produce both ale and beer. In this case 12 barrels of ale at 70lbs gravity, and 10 barrels of beer at 30lbs. will be produced. If the object is merely to obtain ale at 70lbs. of gravity, the quantity produceable will be 14 barrels. If table-beer of a good quality, without any ale is required, the quantity of materials to produce 30 barrels of finished beer would be 40 bushels of malt, 25lbs. of good hops, as much water as will produce 35 barrels of hopped wort; and this will finish about 30 barrels of beer. In calculating the quantity of water necessary to produce a given quantity of a first mash, it will be of use to know that an imperial bushel of ground malt absorbs and retains about $6\frac{4}{5}$ imperial gallons of wort.

Burton ale is in high estimation for both strength and quality. It is made from the palest malt and best hops, having a gravity so high as from 36 to 40lbs. a barrel. If the malt be not very good, only one mash can be made for this liqour; but if it be of prime quality, two mashes may be made, not losing sight of the great specific gravity which ought to be produced. The heat of the liquor should be 185° or 190°, adding 5° for the second mashing. If only one brewing is to be made, the wort may be boiled an hour and a quarter; if two,

the worts should be boiled three quarters of an hour for the first, and an hour or an hour and a quarter for the second; keeping constantly in mind that long boiling is injurious to the colour, a property of no small recommendation to the value of the ale. The quantity of hops must be ¾lbs. to the bushel of malt varied by circumstances, but the more hops that are used the higher will be the colour of the ale. During the process of fermentation the heat should be about 75°, and as the first temperature would therefore be 55°, at an average the quantity of yeast, both on account of the circumstances and the great weight of the wort, should not be less than ¾lb. to the barrel. The excellence of Burton ale arises not only from the use of the best malt and hops, but from the peculiar quality of the water, which is impregnated with saline particles from the rocks of gypsum, over which it flows.

The revenue arising from the breweries of England, as already noticed, was of great importance to the state, not only from the duty imposed on beer, but from that raised on malt, of which such immense quantities are annually consumed by the brewers. In the year ended 5th January, 1828, the number of bushels of malt charged with duty was 25,096,337; in 1829, there were 30,517,819; and in 1830, there were 23,428,074.* The duty of 2s. 7d. a bushel on this article for the three years in question, amounted to £10,209,621. 7s. 6d. averaging £3,403,207. 2s. 6d. annually. If to this be added the duty on beer for one year, (taking the average of the same three years) being £3,087,716. 0s. 1d., the yearly aggregate of both will be £6,490,928. 2s. 7d., a prodigious revenue levied on one article of agricultural luxury.

In England, the malt charged with duty after the abolition of the beer duty, was, in—

YEARS.		BUSHELS.		BUSHELS.		£.
1831,	from barley	32,963,470	bigg	38,630,157	duty	4,257,781
1832,	do.	31,669,769	do.	40,492,339	do.	4,090,678
1833,	do.	33,789,009	do.	42,735,480	do.	4,364,413
1834,	do.	34,449,646	do.			4,449,745
1835,	do.	36,078,855	do.			4,660,185

Much has been written against the malt duty, as pressing on the agricultural interests of the country, and that a high impost on it may have this tendency, there is reason to believe, but, that a moderate duty would prove injurious, is questionable. It is argued that the present charge on malt is too high, and that a much greater quantity would be consumed, and the public benefited either directly or indi-

* Parl. Paper, No. 183, 21st June, 1830.

rectly by a reduction. The demand would increase the price of barley, the malster make greater exertions, more hands would be employed, and the price of labour advanced in proportion.

It has been calculated that in the 37 years ended in 1828, the malt tax brought £135,700,000 into the treasury. Before the late beer duty was repealed, the malt consumed in England and Wales was $\frac{4}{5}$ by public, and $\frac{1}{5}$ by private brewers. As a principle maintained throughout this treatise, that high duties are not only injurious to the interests of the manufacture on which they are imposed, but also to the revenue, is well exemplified in the case of the duty under consideration, since it appears that in 1787 the quantity of malt made was 3,400,000 quarters; and in 1828 the quantity manuactured was 3,100,000, notwithstanding an increase of 6,800,000 in the population during this interval of 40 years.

The regulations under which the present malt duty is levied, although giving considerable privileges to the malster, are still sufficiently vexatious, and often place character and property at the mercy of designing individuals. A low duty would lessen not only temptation to evade the law, but induce the trader to act with fairness and put him less in the power of persons connected with his concerns—the results to the revenue would, it is confidently maintained, be proportionably advantageous.

By an act passed in the reign of his late Majesty, the duty on beer and ale was repealed, * under the impression of affording to the people a cheap, good, and wholesome beverage, and relieving them from a tax which operated against their industry. Of the policy of this measure much has been argued by its advocates and opponents; some contending that while it afforded satisfaction and saving to the consumers, it would increase the use of the beverage, and consequently augment the revenue by a greater consumption of malt. On the other hand, it has been urged that an experiment of this nature would tend to deteriorate the article by placing its manufacture in the hands of men, who would take advantage of the public, in the absence of the regulations under which it was governed, which required beer to be made from malt and hops alone, by substituting raw grain in lieu of malt. Both arguments are deserving of serious attention, but perhaps sufficient data have not yet been obtained since the passing of the late bill to enable a just estimate to be formed of either its salutary or injurious consequences. The reader may form a judgment of this, by a comparison of the quantity of malt charged before and since the abolition of the beer duty, as previously given.

* Will. iv. c. 51.

To add to the comforts of the poor and working classes of society, is an object worthy of legislative interposition, but whether permitting the unrestrained sale and use of beer and ale will tend to effect that object without the risk of demoralisation, is a point yet to be determined by experience. From the parliamentary returns of 1831, it appears that 5379 beer-houses were opened under the new act in England and Wales, while the number of licensed public-houses was 45,624. The beer-houses in Wales alone were 1773, equal to nearly half the number opened in England, being 3606, from which it is evident that the increase of the establishments for the sale of beer had multiplied extensively by the removal of the former restrictions, and consequently affording greater opportunities for drinking and irregularity. As to the financial consideration of the question and the benefit which the abolition of the beer duty has conferred on the public, it might be contended that if the revenue is not likely to be decreased by the measure, in consequence of the increased consumption of malt, where is the substantial advantage afforded to the public when the burden is removed from one article and placed on another, which eventually goes by an indirect way to affect the consumer? It is well known that a considerable quantity of grain consumed in the breweries of Great Britain, is drawn from foreign countries; hence it follows, that an increase of the consumption of malt is an increase of the demand for foreign produce, to the injury of the home agriculture. But admitting that the grain manufactured is of domestic growth, is not the abrogation of the duty on beer a kind of bounty for its consumption, to the injury of the great bulk of the people? for, however favourable the law, as it stands, may appear to be, as regards the consumers of malt drink, yet any thing that will enhance the price of agricultural produce must militate against the industry and earnings of the gross of the population. Besides, it is a melancholy reflection, that a temptation and a facility to become dissipated should be put in the way of the public; nor can it be denied, that the beer bill must greatly contribute to this evil consequence, however plausible the reasoning may be in favour of the moderation of the people.

Man is unfortunately too prone to yield to the dictates of appetite in preference to those of reason; hence the irregularities of which we have too often to complain even amongst the wiser and better educated portions of society. "When a nation," says Playfair, "becomes the slave of its revenue, and sacrifices every thing to that object, abuses that favour revenue are difficult to reform;" but salutary restrictions on the use of intoxicating beverages can never, with justice, be com-

plained of as an oppresssion, on which account no well-wisher to his species or his country should be desirous to see an unlimited indulgence in whatever would tend to encourage vice, or render man either contemptible or odious.

When the duty on beer existed in Ireland, it was considered as affecting the comforts of the people, and as a sort of oppression on the nation, as well as giving encouragement to the consumption of ardent spirits. With a view of remedying this evil, the duty was repealed altogether; but experience has shewn that none of the anticipated consequences followed, nor was the revenue on malt thereby increased, as had been expected. Whether the same results may be the consequences of the present measure, time alone can determine.

The revenue raised on this article was of the utmost importance in England, and the regulations under which that revenue was collected, while they gave protection to the fair trader, served equally to ensure to the public a genuine article. As matters now stand, nothing but the competition of trade can protect the public from the avaricious malpractices of cunning and nefarious manufacturers; and since we find that from January 1827, to February 1831, there were in England and Wales 303 informations, many of them for a second offence, against persons for adulterations in beer, of which number only 13 were acquitted; * what may not be expected when the trade is without any legal restrictions?

In Great Britain, the partiality for malt drink has been more extensive than in Ireland; and, therefore, the people would hail any measure as a boon that would permit them a freer enjoyment of long established practices. In Ireland, a taste for ardent spirits has been always a national characteristic, but this is more attributable to the inattention of the legislature than to any peculiarity of the natives either in taste or constitution. The English have been restricted almost to a prohibition in the use of every other beverage except that of beer and ale, but that their taste might not be equally inclined with that of their Irish brethren to a more potent liquor, is mainly to be traced to the vigilance of legislative interference, since we find that the inhabitants of both countries are alike disposed when they have equal access to the same gratification.

That the duty upon beer affected the industrious part of the community alone, is an idle assumption, for we find that the weight of any tax generally falls upon the idle consumer, who seldom thinks of making compound interest on the money he might employ if no such tax existed; for if it did not exist, the money would probably be

* Parl. paper, No. 136; 10th Feb. 1831.

wasted in the purchase of a more expensive gratification. What possible evil could have existed by the continuance of the beer tax, I have yet to learn? Would less beer or ale be consumed, fewer of the fields be cultivated, or the population of the country be diminished? Every person is able to answer these questions; in short, the abolition of the duty has been more to still the popular clamour, frequently the result of inconsideration, than from any conviction of its utility either to the state or to the community. The brewing of beer was as unrestricted before the repeal of the late laws, as it is at present, and the only difference it makes as regards the trade, is, that the visits of the Excise officer are not so obtrusive as formerly on the deleterious manufacturer, and the terrors of his appearance and his power to inflict penalties for misdemeanor, no longer haunt the imagination, nor conjure up fear to the guilty heart. Every person, before the annulling of the act, had liberty to brew beer and ale, either for domestic use, or for sale, and those who made it for their own private purpose, had nothing to do with the officers, or excise regulations, so that the liberty of the subject is nothing bettered by the late enactments.

Though beer is chiefly made from barley, yet it has been produced from other materials than grain. The *field beet, (mangold wurzel)* sometimes called the *root of scarcity*, on account of its esculent qualities, has been successfully employed in this way. From this vegetable, ale is made of different strengths and qualities. A good drink is obtained from ten pounds of the root to a gallon of water; but fifteen pounds to the gallon make a better beverage.

The best mangold wurzel ale is procured from a portion of two-thirds of the root, to one third of malt. The method observed in the process is to cleanse the roots well, scrape off the rind, slice them, and boil them down to a pulpy consistence. From this, the liquor is squeezed out till not a particle remains. This juice is then boiled with hops in the ratio of six ounces of the latter to nine gallons of the former; yeast is then added in the usual way, and the liquor is speedily fermented. Mangold wurzel is also used in distillation, and an act has been passed legalizing its manufacture into spirits;* the red species is the most common, but the pale yellow sort is preferred by the distiller and sugar-boiler: though possessing the vinous principle in a considerable degree, yet it is scarcely half so productive in that respect as the potato. Mangold Wurzel requires little care in its cultivation, and from its value to farmers, is daily getting into estimation; it grows some times to a great size; a single root has

* 4 William IV. cap. 74.

been known to weigh 32lbs., measure 30 inches in circumference, and, including the top, to be 4 feet in height.

Spruce Beer, which is a common drink in Great Britain and Ireland, is either white or brown, according as sugar or molasses is employed in the making. In Norway, Sweden, Denmark, and America, where pines abound, this liquor is made from a decoction of the leaves, rind, and branches; but with us it is an essence or fluid extract procured by boiling the shoots, tops, bark, and cones of the Scotch fir *(pinus sylvestris)* which are used in the process. A solution of any of the natural or prepared sweets, with a due proportion of spruce, makes *spruce beer*, *spruce ale*, or even *spruce wine*.

Molasses is commonly adopted; sugar is preferable, and honey is excellent. Various recipes have been given for the manufacture of this beverage. The following may be taken as a pretty correct standard:—To 8 gallons of boiling water, tempered by 8 gallons of cold water, add 16lbs. of treacle for *brown*, or 16lbs. of lump sugar for *white* spruce, with 6 table-spoons full of essence; mix them well together, and ferment them with half-a-pint of barm for two days; and then bottle for use. A weak extract of malt makes a good spruce beer, when well regulated in the process. The virtues of this liquor are, perhaps, not so well known as they should be; it may therefore be proper to observe, that all preparations from spruce are warm, stimulating, and anti-scorbutic, sweeteners and purifiers of the blood, cleansers and healers of internal ulcerations, and, like other bitters, strengtheners of the vessels, dissolvents of mucus, and expellants of calcareous concretions: hence, in long voyages, *essence of spruce* is now deemed indispensable. When this article was first used in making a beverage, is not well known;* from the mildness of its effects, it has attracted less of that notice which intoxicating liquors usually command: while, however, its medicinal qualities are of benefit to man, it has not by its consequences, depreciated his character, or lowered him in his moral dignity.

The manufacture of cider in England is of some importance, and its qualities have been long celebrated. As a summer drink, it is in great demand, being less subtle and impetuous than wine, possessing so agreeable an acidity, and so capable of allaying thirst, that it is accounted superior to some of the ales; besides, it does not cause flatulence, and serves as an agreeable, gentle aperient, very salutary in warm seasons. By distillation it produces a good spirit, but is seldom converted to that purpose, in consequence of its acidity rendering the liquor rather disagreeable; but this is greatly remedied by

* Vide page 480.

rectification. In Normandy, a great deal of cider is distilled, some of which is sent to this country under the name of arrack, or some other foreign spirit, according to the way it has been flavoured. The invention of this liquor is attributed to the Normans. As however the term cider was applicable to all kinds of strong liquors except wine, it is reasonable to think, that its invention was long known to the most ancient nations, since the apple is spoken of in several parts of holy writ, and the liquor produced from it is celebrated by the Greek and Roman writers. Cider is alluded to by Tertullian and St. Augustine, from which some have supposed that it was of African origin, and brought from that continent by the Carthaginians into Europe. Its introduction into England is thought to have been about the time of the conquest, though in contradiction to this, it is asserted that apples were plentiful in Britain centuries before that era; and Whittaker says the use of this beverage was introduced by the Romans.* Like many other inventions, the exact period of its origin cannot be determined in this, or any other country. No nation has so highly appreciated the value of cider as the English; and Phillips has immortalized its virtues in a classical poem in imitation of Virgil's Georgics, which Johnson says, "need not shun the presence of the original."

In cider, the aqueous, oily, and vinous principles are so admirably blended, and the wholeis so imbued with the grateful flavour of the rind, the aroma of the pulp, and the bitter of the seeds, that, when matured by time, the liquor becomes both delicious and wholesome. The lovers of cider say that those who drink it are more healthy and strong, and have better complexions than persons addicted to ale or wine; and according to Lord Bacon and Dr. Baynard, it promotes longevity. In the estimation of Sir George Baker, it possesses such medicinal qualities that drinking it in large quantities has been known to cure several persons of dropsy.†

In the process of making good cider, the apples should be assorted according to their kinds, and the degrees of ripeness, and left for some time in heaps. They should afterwards be bruised in a mill or trough, and allowed to remain in open vessels a day or two, and then pressed between hair-cloths, the liquor running into a vat or large cask, and suffered to stand there until fermented, when it should be drawn off and placed in other vessels till it becomes fine and clear; and lastly, racked off and kept in casks, or bottled for use. A portion of brandy, with a little flour of sulphur infused, renders the liquor purer and less liable to grow hard and sour.

* Hist. Manchester, vol. i. p. 321-2.

† Medical Transactions of the College of Physicians, 1772.

Modern cider-makers conceive that while fermentation is going forward, the introduction of a moderate proportion of sugar would greatly tend to the improvement of the liquor on the principle that the French recommend amelioration of their harsher wines by a similar mixture during fermentation. This, it is thought, while it strengthens the body of the drink, imparts to it a peculiarly rich quality.

A similar practice is common in Burgundy, and in the process of making wine it is singular that a preference is given to sugar extracted from potatoes, not only on account of its cheapness but of its more readily amalgamating with the fluid than either the sugar of the cane or of the beet-root. The wines of Burgundy are never brandied, except those made up for the English market, the sugar supplying the place of any addition of spirits. Were sugar extracted in large quantities from potatoes in the cider districts of England, an improvement might be made in this drink at a trifling expense.

A very strong liquor may be obtained from cider, by allowing it to freeze, and then drawing off that portion of the fluid which remains unfrozen in consequence of retaining its heat. A most wholesome liquor called *Pomona wine*, is prepared, by adding 1 gallon of brandy to 6 of new cider after being racked off, which, when eight or twelve months old, is a good substitute for wine, and preferable to many of the wines sold by retailers.

Perry, a beverage prepared from pears, in the same manner as cider from apples, is considered to be, when well made, not inferior to some wines, and has been often passed for champagne on account of its close resemblance in taste and sparkling. It is, therefore, frequently used by retailers in the adulteration of that wine. At the period of fixing the duty on ale and beer, cider and perry were also subjected to a taxation of 1*s.* 3*d.* per barrel; but the law being now repealed, it may be sufficient to state, that the revenue on cider and perry was never considerable; the last three years before the repeal of the act, which took place in 1830, the amount of revenue was, in 1828, £37,380 on 3,161,971 gallons; in 1829, £25,015 on 2,677,195 gallons; and in 1830, £49,044 on 4,129,453 gallons.

The principal cider and perry districts of England are in Hereford, Gloucester, Devon, and Worcestershire. The apples that are favourites of the table, are seldom fit for cider-brewing; those of a red and yellow colour are most esteemed. The harsher sort of pears produce the best perry; the redder and more tawney they are, the more they are preferred; and crab-apples mixed with them are said to improve the quality of the liquor One great advantage attending the culture of pear-trees is, that they will thrive on land where apple-

trees would perish, and that they grow so large that a single tree has been known to afford from one to four hogsheads of perry. An extrordinary tree in Herefordshire has more than once produced fifteen hogsheads in a year. This tree covers nearly half an acre of land, and like the Banian of the East, its extended branches becoming heavy, bent their extremities to the ground, took root, and produced other branches, each forming, as it were, a distinct tree. For further information respecting the mode of manufacturing those liquors, the reader is referred to works written expressly on the subject.*

As to wine, it was always held in such high estimation, that the importations were carried on extensively. In 1272, Edward I. imposed a duty of two shillings on every tun of wine imported into England in lieu of the old impost called prisage†—an ancient branch of the royal prerogative. This tax afterwards obtained the name of *butlerage*, because it was paid to the king's butler; this duty charge was abolished in 1311. When the first duty was levied on wines, the importations were principally French and Rhenish; the Spanish, Portuguese, and Italian wines being then little known. About the year 1300, the merchants of Gascony were settled in London in great numbers; and in 1317 an order was issued, "that merchants who are not of the freedom of the city are forbidden to retail wines or other wares within its precincts or suburbs." Home-made wines were also in repute in those times, since we find that in the reign of Henry III., a gentleman held his manor of Norfolk on condition of supplying the king, annually, at his Exchequer, with two vessels termed *mites* of wine made of pearmains; and in the subsequent reign of Edward I., pearmain cider was also called wine, which, perhaps, might account for the mention of vineyards in old times in Kent, Sussex, and other parts of England, to prove the existence as well as the extent of which has caused much trouble and controversy. If an argument were wanted to show even the inutility of vineyards in Britain, the cheapness of foreign wine at the time the vine is said to have been cultivated in England, is conclusive, since, according to Stowe, in 1342, the price of Gascon wines in London was only 4d., and that of Rhenish 6d. per gallon; and in 1389, foreign wine was but 20s. per tun for the best sort, and 13s. 4d. for the second, making it about

* Knight's Treatise on the Apple and Pear; Crocker's Tract on the Art of making and managing Cider; Marshall's Rural Economy of Gloucestershire; Shannon on Brewing; also the writings of Nicol, Abercrombie, Neill, Forsythe, Vancouver, &c.

† Sinclair's Hist. Revenue, p. 40 and 94.

three half-pence per dozen, certainly much cheaper than it could possibly be made in England. At those periods, the English were much addicted to habits of inebriety and spent a great portion of their incomes in riotous feasts, where eating and drinking were carried to excess without elegance or reputation. According to Hollinshed, the strongest wines were in the greatest request, while claret and other light wines were scarcely thought of. Giraldus Cambrensis describes the tables of the monks as loaded with the most costly and delicate dainties, as well as an excessive abundance of different sorts of wines, such as claret, mulberry wine, mead, and various sorts of strong liquors, so that no room was found for ale. This writer relates that the monks of St. Swithin, at Winchester, fell prostrate before Henry II., and with tears in their eyes, complained of their bishop having withdrawn three dishes from the usual supply of their tables. When the monarch found that they had still ten left, he told them he was himself contented with three, and that he would curse the bishop, if he did not restrict them to that number. The laity also indulged in the luxuries of the table. John of Salisbury says, that they drank wine out of gilded horns, strewed their houses with flowers, and sung songs when they became inebriated.

In 1354, there were 1829 tuns of wine imported into England, and wine was so abundant, that in 1392, when Richard II. after a long absence, was received in London by the citizens, with great demonstrations of joy, the very conduits in the streets, through which the cavalcade passed, were allowed to run with every variety of this beverage.* To this extravagance there are few parallels, except that of Potemkin, when he gave a magnificent feast to the empress Catherine, at his palace in the Taurida, when the conservatory fountains were filled with champagne and claret, and served to the company by means of silver pumps applied to those reservoirs; at this time white wine was sold at 6d. and red at 4d. per gallon.† Chaucer the poet, in the reign of Edward III., was the first who received a potation of wine daily from the king's butler, and Richard II., in 1398, granted him a tun of wine yearly during his life, with a pension of £20, both of which grants were confirmed by Henry IV. In the reign of this monarch, among the articles which furnished the breakfast table of the nobility, were, for a gentleman and his lady in lent, a quart of beer and a quart of wine; and a gallon of beer and a quart of wine

* Maitland's London. † Stowe.

at their *liveries*, a kind of repast taken in their bed-rooms immediately before going to rest. At this time, wine was usually drunk warm and mixed with spices, but whether to promote health or to gratify the palate is now unknown. Under Edward VI. wine rated at from 4d. to 15d. a gallon, and it was a singular enactment, that none but such as could spend 100 marks yearly rent, or was worth 1000 marks, or the son of a duke, earl, viscount, or baron, could keep any vessel of Gascony, Guienne, or Rochelle wine for his family's use exceeding 10 gallons, under forfeiture of £10. None could be retailed without a license, and only two taverns could be kept for retailing, in any city or town, except in London; which was permitted to have 40— York, 8, &c. &c., and none of these could retail wines "to be spent or drunk within their respective houses." In the time of Henry VIII. wine was used at breakfast in common with beer, and we are told that a quart of each was the usual quantity served to two persons. At an entertainment given to Queen Elizabeth, at Kenilworth Castle, by the Earl of Leicester, it is said that an immense quantity of wine was consumed, besides 365 hogsheads of beer. In her reign the English were extravagant in the use of wines; Harrison enumerates fifty-six sorts of French, and thirty-six of Spanish, Italian, Greek, and Canary wines, so that 30,000 tuns were annually imported. To these were added, *hippocras*, *worm-wood wine*, *stale ale*, *strong beer*, *clarey, or claret*, and *bracket*. The beer of the gentry was commonly a year or two old, and was denominated March beer, from the month in which it was brewed. About this time, drinking-glasses were introduced from Venice, and, from their novelty, were more prized than silver cups, or those made from horn, however highly ornamented.

Up to the period of the Revolution, the principal supply was brought from France, at which time, according to the report of the commissioners of trade and plantations, not less than 20,000 tuns were the imports for one year. The duties on these wines, in 1713, were as high as £24 per tun. From 1770 to 1782, they were from £60 to £96. On other wines the duties were upwards of from £30 to £45 per tun. During the four last years of this period, the average quantity imported appears to have been 14,094 tuns, while the re-exportation was 2,006, leaving a balance of 12,000 tuns for the consumption of the country. The quantity of every description of wine imported into England for a series of five years from 1823 to 1827, both inclusive, was 26,539,916 imperial gallons, and the export for the same period 4,997,410, leaving 21,542,506, averaging 6,308,501 gallons for the annual consumption of a population of 13,894,572.

The quantity of wine imported and exported from 1834 and 1835, with the rate and net revenue thereon is as follows :—

	IMPORTED.		EXPORTED.		Rate of	NET REVENUE.	
	1834	1835	1834	1835	Duty.	1834	1835
Cape wine,	484,298	587,748	5,668	3,184	2s.9d.	72,048	71,935
French,	363,376	370,446	128,506	113,236	5s.6d.	71,031	74,080
Portuguese,	4,213,427	4,269,890	296,538	475,084			
Madeira,	372,698	204,825	173,910	179,735			
Spanish,	3,446,563	2,732,028	688,024	692,730	5s.6d.	1,562,341	1,545,493
Other sorts,	885,754	874,614	346,575	409,612			

The high price on foreign wine induced many to manufacture an article from gooseberries, currants, and other fruits, as substitutes ; but it is to be presumed that the reduction of the duties by a recent act,* will have the effect of rendering it unnecessary to have recourse to the home produce to the same extent as formerly.

The fruit from which the home-wines are chiefly made, is the gooseberry, currants, raspberry, strawberry, cherry, plum, &c. In former times, wines were made from mulberries, blackberries, quinces, peaches, apricots, and even from the sap of the birch, beech, sycamore, and some other trees. Of all the domestic wines, the gooseberry and currant are the most common, owing to the abundance of those fruits ; the gooseberry has a fine body and pleasing acidity ; the currant a rich aroma, and mellow softness. The manufacture of these wines, if it may be so called, is too familiar to require description or specific directions. The following method, however, of making superior currant wine, as recommended in a French publication, may not be unacceptable :—

For *currant wine*—Eight pounds of honey are to be dissolved in 15 gallons of boiling water, to which, when clarified, must be added the juice of 8lbs. of red or white currants. The whole is then fermented for 24 hours, and for every two gallons of water, must be added two pounds of sugar. This preparation is afterwards clarified with the whites of eggs and cream of tartar.

For *gooseberry wine*—The fruit should be gathered when dry and about half ripe, and then pounded in a mortar. The juice, when properly strained through a canvas bag, is mixed with sugar, in the proportion of 3lbs. to every 2 gallons of juice. It is then left in a quiet state for 15 days, at the expiration of which it is carefully poured off, and left to ferment for three months, when the quantity is under 15 gallons, and for five months when double that quantity. It is then bottled and soon fit for drinking.†

* 1 and 2 Will. IV. c. 30. † Bibli. Physico. Econom.

Some make a very excellent description of wine from a mixture of gooseberries and currants, the gooseberries being most predominant.

The mixture is bruised and fermented in the usual way; but this, as well as every other description of home-wine, is much improved both in flavour and body by the addition of a due proportion of pure spirits;—indeed without this ingredient, all domestic wines are prone to run into the acetous fermentation.

Plums make a very fine sort of wine, and with a mixture of other fruit and ingredients, produce the best substitute for port that has yet been invented. Sloes are said to be superior to plums for wine-making, and like them afford an excellent tart in confectionary. From elder-berries is easily manufactured a pleasing sort of wine, which, when warmed, is much esteemed, and forms a comfortable and grateful beverage to the English farmer when he returns from the toils of the day. From the red-berries of the mountain-ash or service tree *(pyrus aucuparia,)* an agreeable wine is made, from which has been distilled a good species of brandy.

Birch wine is still made in some parts of England; at Overton Hall it is manufactured in the following manner, differing little from the process already described, as practised in Norway: in March, the trunks of the trees are bored to the depth of an inch and a half nearly, and about three-quarters of an inch in diameter, at the distance of a foot from the ground. Directly below the orifice, a metal tube is fixed into the bark through which the juice flows into a receiver placed underneath. When the weather is warm, the water thickens and closes the perforation, so that in a few days there is no exudation; but if the weather be cold or windy, there will be a constant discharge for a month. Some trees will produce 24 gallons in a day; others but a trifling quantity. This birch liquid brings 6*d.* a gallon, when sold for the purpose of making a light or small wine. If not immediately disposed of after being taken from the tree, it will not keep sweet more than a day; it is heated nearly to boiling in order to preserve it, and then left to cool.

When a sufficient quantity is then collected, to every gallon of juice, 2lbs. of sugar and $\frac{1}{4}$lb. of raisins are added. This mixture is boiled for an hour, skimmed, and left to cool to such a temperature, that when yeast is added, fermentation commences. In this state it is left to work for ninety-six hours, after which it is casked, when 5lbs. of raisins and 1oz. of isinglass are added for every 20 gallons. The bungs are left open, and in less than a month it is cleansed of the feculence, the casks are then closed up for about three months, and in a few weeks, after bottling the liquor, it is fit for use, but like most other wines it improves greatly with age.

From many of our vegetables, good wines may be obtained. The parsnip in particular, yields an excellent description, and is said to approach nearest other imitations. The making of it is not expensive, and it only requires age to render it a wholesome and valuable beverage.

From potatoes which have undergone, if it may be so termed, a species of malting by exposure to frost, wine of a tolerable quality has been obtained. The frosted potatoes are bruised and put into a press : for every bushel of these, 10 gallons of boiled water is prepared. Into this water are put $\frac{1}{2}$lb. of hops and $\frac{1}{2}$lb. of white ginger, which after having been again boiled for thirty minutes, is poured on the mashed potatoes in a vessel adapted to the purpose. Here it is suffered to remain three days, when barm is added, and after the fermentation has subsided, the liquor is carefully drawn off into casks, when $\frac{1}{2}$lb. of common sugar is again put to every gallon of the contents. In this state it is kept for three or four months, before it is considered fit for drinking.

From these home-made wines, brandies of a nice flavour and quality have been distilled, some of them superior to the common brandies of France, and to which none of the English compounds bear any comparison. From turnips, it is said, the London imitators of foreign wines make an article which passes with the public as genuine.

In the shops is frequently sold a home-made wine under the name of port, which is manufactured from raisins with a mixture of sugar colouring, and flavouring ingredients so well managed, that good judges are sometimes deceived : red and white wines are thus made at the option of the manufacturer. In a similar way, have imitations of wine been made from sugar, honey, molasses, &c. &c. ; all of these have been classed by the revenue under the denomination of *sweets*.

Imitations of almost every description of foreign wine have been attempted, and with such success as to frequently meet with a ready sale ; but as all imitations fall short of the original, and as it is not within the range of this treatise to give instructions for the manufacture of mock articles, the reader is referred for further information to Dr. Shannon's elaborate Treatise on Brewing. It has been asserted, and with justice, that great deception has been practised in the wine trade by the venders of wine in general, and if we believe Dr. Clarke, a great portion of the champagne used in this country is made from green gooseberries and sugar, being an imitation of the common champagne of France, which is made with green grapes and sugar. The home-made wines, or sweets, have been subject to an excise duty, which for the year 1833. amounted to £2,763 7*s*. on 10,534

gallons; and for 1834, to £2,866 9*s.* on 114,658 gallons: this duty, however, has been abolished.

The duties and drawbacks on all descriptions of foreign wines rate as follows.—Cape wines are chargeable with 2*s.* 9*d.* a gallon on importation, and in exportation a drawback is allowed to the same amount. On every other description of wines a duty of 5*s.* 6*d.* must be paid on importation, and a like sum is given as a drawback on exportation. This equalization of the duties on wines, while it has simplified their collection, has added much to the encouragement of their consumption, and must eventually tend to the increase of the revenue, besides leaving this valuable luxury more easily attainable. It is an extraordinary fact, that the names given to wine in every country bear a strong resemblance to each other, as if Providence had intended it as the general exhilarating beverage of mankind; all seem to be derived from the original Hebrew word יין, from the verb *ine* to press, according to Parkhurst, or the Chaldaic *iaino*, which is in Greek οινος, Latin *vinum;* Spanish and Italian, *vino;* French, *vin;* Celtic or Welsh, *gwin;* Cimbric, *uin;* Gothic, *wein;* old German, *uuin;* Danish, *vien;* Dutch, *wiin;* Irish, *fion;* and in English, *wine.*

With respect to distillation, the spirit of inquiry which had influenced all Europe in the vain search after the philosopher's stone, was in England productive of some good effects, as the discoveries of Friar Bacon, who lived in the thirteenth century, fully prove. He it was who laid the foundation of chemical science in these countries, but with all his knowledge, he was himself a believer in a *universal elixir*, and proposed it to Pope Clement X. as a matter worthy of his highest consideration. The Pontiff thought otherwise, and for this and his other discoveries, he was supposed to have some dealings with the devil; on which account he was excommunicated, and as a further punishment, subjected to ten years' imprisonment—so much for the superstition of the times. Bacon was deeply conversant in the Grecian and Arabian learning, and being familiar with many Oriental and other languages, he made himself acquainted with the writings of the most eminent alchymists and philosophers, from whose discoveries he was enabled to make still farther advances in chemical analysis. He is said to have known the nature of phosphorus, the composition and power of gunpowder, and his *elixir vitæ* must have been the result of experiments in distillation. To this profound philosopher, as well as to the efforts of Albertus Magnus, Arnoldus de Villa Nova, Raymond Lully, and others, we are indebted for an early and practical knowledge of the chemical labours of the Arabians, whose indefatigable researches first laid open to European investigation the

sources from which *aqua vitæ*, or the great elixir of life, might be drawn. But that the Arabians were not the inventors of distillation, I have endeavoured to show, in other parts of this treatise, from principles based on the progress of civilisation, the introduction of luxury, and the general history of mankind. In England, for a long period, the manufacture of *aqua vitæ* was slow, and like the progress of the alembic in other parts of the world, was sold in the shops of the apothecaries as a medicine. We find from a catalogue of the mercantile productions of every state in Europe, appended to a poem by Haluyt, entitled " The Progress of English Policy," that in 1430 the Genoese traders brought into this country, *rack* or *arrack*, shewing that they were in the habit of making it and dealing in it, like any other article of traffic or commercial speculation.

France, for a series of years, was the great still-house of Europe, as her wines afforded a constant supply for the distillation of brandy; but as the knowledge of agriculture advanced, and grain became plentiful, the demand for that spirit diminished, and the home manufacture at length attained to such importance, that it was taxed with a duty of two-pence per gallon in the reign of Charles the Second. At first it was thought expedient to lay the duty on spirits of the first extraction, or, as they were termed, *low wines*, and the earliest returns of the English distillery on record are made up in that way.

The produce of all the stills in England in 1694, amounted to 1,885,752 gallons of *low-wines*, or 754,300 gallons of spirits, and in 1743 it had increased to 12,498,800 gallons of *low-wines*, or 4,999,520 gallons of spirits. The duties, in 1751, were raised to four-pence on the gallon of *low-wines*, and to one shilling on the gallon of spirits. The manufacture decreased in consequence, and the produce was only 11,200,000 gallons of *low wines* in that year. The duties were also raised in 1760, and then amounted to 9d. on the gallon of low wines, and to 2s. 3d. on the gallon of spirits, equal to $36\frac{3}{10}$d. on the gallon of pot-ale, or wash. These high and increasing duties tended to decrease the operation of the stills; for we find that in 1783, the whole amount of spirits charged with duty in England, was only 1,364,801 gallons. In 1785, the contents of the stills which were worked from the raw material, amounted to 223,877 gallons, exclusive of those of the rectifiers, amounting to 159,852 gallons. The revenue then arising from the gross distilleries was £324,895. 9s. 1d. In 1802, it was estimated at £500,000 and on the 5th January, 1812, it amounted to £505,015.

The following exhibits the quantity of spirits charged with duty in England, with the amount thereof, for five succeeding years :—

YEARS.	GALLONS.	£.	s.	d.
1831,	7,434,047	2,787,767	12	6
1832,	7,259,287	2,722,232	12	6
1833,	7,717,303	2,893,988	12	6
1834,	7,644,301	2,866,612	17	6
1835,	7,315,053	2,743,144	17	6

The imports of foreign spirits from an early period were very considerable; and in the time of Elizabeth they were of such importance, that they ranked among the commodities bestowed by the crown on individuals who had distinguished themselves either in civil or military employments. In the subsequent reigns, till the time of Charles the Second, they were subjected to various changes and regulations, a detail of which could afford but little interest to the general reader. It is enough to show that the imports of colonial and foreign spirits, on which consumption duties were paid, amounted to in

YEARS.	IMP. PROOF GAL.	YEARS.	IMP. PROOF GAL.
1820,	7,526,696	1827,	11,072,935
1821,	7,261,531	1828,	12,172,768
1822,	7,849,520	1829,	12,217,276
1823,	7,157,334	1830,	12,509,502
1824,	8,068,427	1834,	12,152,052
1825,	7,013,338	1832,	12,224,116
1826,	12,887,487	1833,	12,403,165

Of foreign and colonial spirits were imported and exported in

YEAR.		IMPORTED.	EXPORTED.	YEAR.	IMPORTED.	EXPORTED.
1834,	Rum	5,158,489	1,642,282	1835	5,540,170	1,678,374
——	Brandy	3,170,297	912,335	——	2,105,755	1,117,253
——	Geneva	347,597	261,571	——	277,141	280,768
——	Other sorts	46,432	43,160	——	57,651	25,779

In these years the duty on rum was 9s. per gallon, and on the other liquors £1.2s. 6d. In 1834, the quantity retained for home consumption was 3,345,177 gallons of rum, and 1,420,172 gallons of the other sorts producing a net revenue of £3,100,669; and 1835, the gallons of rum for home consumption were 3,416,966, of other sorts 1,348,740 yielding a revenue of £3,047,359.

It may be seen that, notwithstanding the high duties on all foreign spirits, large importations of them have been made into England, which when added to the home-made spirits, show that the people, although attached to porter, beer, and ale, consume no small portion of ardent liquors. Were it not at variance with the domestic arrangements and policy of the kingdom, the use of rum should be more encouraged, being an article preferable to any imitations, how well-soever manufactured.

It has therefore been contended, that to lower the duty so as to allow rum to compete with the home manufacture, would be for the advantage of the public, as a great deal of the spirits distilled in England is made from foreign grain; such a regulation would tend to the encouragement of colonial produce, and assist the home agriculturist by preventing an influx of corn from other countries. Sugar has become an indispensable article of life, is reared at great expense and trouble, and the planter has materials left which can only be turned to account by distillation. To encourage the consumption of rum, therefore, is the interest of the government, not only as regards our colonies abroad, but as it would exclude the introduction of foreign gin and brandy, as well as the grain from which many of our compounds are manufactured. Whether it might be a wise speculation to admit the free use of molasses in our distilleries, as has been suggested, is a point that involves a variety of considerations; but, on the whole, it may be observed, that rum can only be manufactured to perfection in the plantations where the materials from which it is made, are produced: and here it may be asked, what spirit can be considered superior to pure old genuine West India rum? The further circulation of this spirit, by an equitable duty, could scarcely fail of checking the baneful practice of smuggling—a practice carried on to an extent equally injurious to the revenue and public morals. The enormous expense attending the support of an establishment for the suppression of this evil, perhaps, more than counterbalances the good resulting from it: the dangers consequent on the execution of this duty, and the rencounters between the smugglers and the protecting officers, afford numerous anecdotes characteristic of the ingenuity and ability of the parties employed. I recollect an incident related of an officer engaged in this service, which shows what a brave and determined man can accomplish on a trying occasion. While a party of smugglers were regaling themselves in a tavern on the eastern coast of England, and recounting their several exploits and contrivance in defeating the revenue officers, one of them boasted that he had never met a person able to take from him a single tub of gin, rum, or brandy. What, said one of the company, have you never met with Mr. Bateman? If you had, you would find that the very devil himself could not escape him." "I wish," said the other, "I had a trial of his skill, I should teach him to be cautious in attempting to put a hand on my property." At this juncture, Mr. Bateman entered the tavern, when the other exclaimed—"there he is," and calling him by his name, repeated what had just passed. "Well," said the excise-man, "I am not anxious to pick a quarrel with any body, but if any occur-

rence should bring your friend and me to issue in future, I would only ask for fair-play." It was jocularly agreed that if such an incident should ever happen that the parties would recollect what had taken place. Some time after, this officer met the vaunter carrying a tub of smuggled geneva, and recognising him, instantly exclaimed, " what, my friend, have we at length met? I must see what it is you are now carrying." " No," answered the other roughly, not recollecting the person by whom he was accosted, " no man shall examine what I carry." " Well then," rejoined the officer, " let the better man have it; and, as once agreed, all I ask is *fair play.*" The cask was laid down, and to it they went, both having excellent cudgels. The fight was for a long time well contested; but the officer at length proved *the better man*, and suffered the smuggler to escape only with his life, on the condition of carrying the tub of geneva to the very tavern, where he had boasted so much of his prowess.

Another anecdote is told of this person, that, on one occasion, assisted by a brother officer, he succeeded to seize on the coast of Kent, 300 tubs of geneva, and to make prisoners of 17 men—a matter so extraordinary, that he was suspected of being in collusion with the smugglers. On this supposition, he was brought before the commissioners for examination, but he proved that he had acted as became a man of spirit, honour, and integrity.

Having given a brief view of the nature and extent of the spirit, wine, and beer trade in England, it only remains to make a few remarks on the present mode of distillation in that part of the empire.

By the enactment of 1825,* no person can obtain a license for conducting a distillery, unless he occupies a tenement of the value of £20 a-year, pays parish rates, and resides within a quarter of a mile of a market town containing 500 inhabited houses. Before obtaining a license, the amount of which is £10, he must lodge with the collector, or other officer of excise, an entry or registry of his premises, the several apartments and utensils, specifying the contents of the vessels and the purposes for which they are intended; and every such room and utensil must be properly labelled with its appropriate name and object. With the registry must be delivered a drawing, or description of the construction, use, and course of every fixed pipe in the distillery, as well as of all casks and communications, therewith connected. Pipes for the conveyance of worts or wash must be painted red, those for low wines or feints, blue; those for spirits, white; for water, black. No still can be licensed of a less

* 6 Geo. iv. cap. 80. Part of this act, as far as regards rectifiers, dealers, and retailers of spirits, is extended to Ireland by 9 Geo. IV. cap. 45.

content than 400 gallons; nor can the distiller make spirits, at the same time, from different materials, such as grain, sugar, and potatoes, nor he cannot cease distilling from one material and commence with another, until he shall have completed a month's work of the one article and have given six days' notice before commencing a change; nor can any distiller brew or make worts, or wash, during the distilling period, so that both operations cannot be carried on at the same time. Besides, the produce of each day's brewing must be separate, and the officer must be served with a notice in writing for every such brewing. The distiller is obliged to give notice, six days previous to the commencement of his work, of the gravity at which he intends to make his worts or wash, which cannot be less than 50, nor more than 90 degrees; and a like notice, if he wishes to make any alteration. The worts of every day's brewing must be collected in a fermenting back within the space of 8 hours after the running commences from the coolers, and then a notice must be immediately served on the officer specifying the back with the gravity and quantity of the worts collected; no yeast nor barm can be added until after the officer shall have taken an account of the gravity and quantity of wort in such back, which must be within two hours from the delivery of the notice to the officer. Should the gravity, or quantity, after such account has been taken, exceed that previously ascertained by 5 per cent. the distiller is subject to £200 penalty, and the whole to be charged as a new back or brewing; nor can distillation begin until a declaration has been made, that all worts or wash in the distillery is collected into the fermenting backs, and eight hours' notice must be given before the contents of any back are removed to the charger or vessel from which the still is supplied. Until one back is completely distilled into low-wines, another cannot be removed, and a notice must be given, in order that the strength of the low-wines may be ascertained before they can be removed from the receiver to the charger, while the low-wines, spirits, and feints, produced from each back, must be kept separate until an account is taken of their strength and quantity by the officer. In a distillery, there are three modes of charging the duty either on the wash, low-wines, or spirits, whichever is the highest; and the manner of doing it is as follows:—On worts or wash, the strength is made out at one gallon of proof spirits, for every five degrees of gravity attenuated in every five gallons of wash. The low-wines are estimated according to the strength brought to proof, making an allowance of 2 per cent. in favour of the distiller; and the spirits which are produced from the low-wines of each back, are calculated at proof, the feints remaining, being deducted. If any

spirits should be found beyond the proportions just stated from any given quantity of wash, it is called an "*undue excess,*" and charged with duty accordingly. These charges of duty are made out at the end of each period; besides which, there is an annual charge or compare made of the quantity of spirits that ought to have been produced, with the actual quantity charged; and should a deficiency appear, the trader is subject to pay the duty on the difference. This compare must be returned by the officer within one month after the expiration of the year's license, and the trader is obliged to pay the amount within ten days after.

In the process of the work, the charges are made from the highest guage without any allowance for waste or dregs in the worts; and the distiller is required, at the end of every distilling period, to make a return of the quantity of wash distilled, and the spirits produced, and no spirits can be removed from any distillery in a less quantity than 80 gallons, at a strength of 25 or 11 per cent. above, or 10 below hydrometer proof.

Distillers in England can warehouse their spirits for exportation only, or for removal to Scotland or Ireland, without payment of excise duty, at a strength of either 25 or 11 per cent. over hydrometer proof. All spirits manufactured in the United Kingdom by simple distillation are, by the Act, denominated plain *British* spirits; but all spirits produced by rectification, and having any flavour communicated thereto, and all liquor which shall be mingled or mixed with any such spirits, is deemed a compound called *British* brandy; and all other spirits re-distilled or mixed with juniper-berries, caraway-seed, anise-seed, or any other seeds used in the compounding of spirits, shall be deemed and called *British* compounds: lastly, all spirits of the strength of 43 per cent. and upwards over proof by Sikes' hydrometer, are called *spirits of wine*, or *alcohol.*

The mere working of the still in England is a simple mechanical process, to perform which, the distiller is not restricted to time. The concerns are in general so large that the stills are in proportion; some of them containing from 10 to 20,000 gallons and upwards; hence an entire back is conveyed at once into one of these stills, and the charge of the low-wines' still is the produce of the wash from the wash-still. At the period when the fermentation has ceased in the fermenting back, and the wash becomes fine and of a vinous flavour, it is conveyed into the wash-still and made into the low wines. These are afterwards put into the low-wine still and made into *spirits* and *feints.*

The particular skill requisite in conducting a distillery to advan-

tage relates to the brewing and fermenting, in order to obtain the entire saccharine matter of the grain, or rather the material from which the spirit is to be extracted,—a sort of knowledge which has absolutely become a science in the hands of those who possess it. As all the apparatus connected with a distillery are kept under lock and key, the moment a distiller is about to commence the operations of making spirits, the Officer of Excise attends with a bunch of keys to open the following locks: viz., the lock on the cock in the back, then that leading into the charger, and as soon as it is full, the cock between it and the back, is again secured, when a guage of the wash is taken; after which the discharging-pipe is unlocked to permit the run into the still. After this, the furnace door and discharge-pipes of the still are unlocked, and the distiller is permitted to proceed with his work until the distillation is completed. When the wash-still is charged, which is generally with something less than three-fourths of its contents, the locks are again replaced and sealed up, and the officer takes stock the second time to ascertain the decrease of wash and the state of the other locks, which are commonly found to correspond: the decrease or quantity stands as a charge against the distiller.

During the working of the still, one or two officers visit the concern, and inspect the process; and when the still is completely off, they either re-charge under a previous notice, as before stated, or if no such notice is served, they lock up the furnace door. The same locking and unlocking take place in the case of the low wines' still. The produce of this still, known by the name of *spirits* and *feints*, run into separate vessels properly secured, and when the distillation of the low-wines' still is completed, the officer takes an account of the quantity and strength of the spirits and feints in the same way as with the low-wines, reducing them by calculation into proof spirits; after which the liquor is added to the stock of the house, and the feints left to be re-distilled with the residue of the succeeding back. At the conclusion of each distilling period, the officer makes a return to the collector of the quantity so distilled, the duty on which must be paid unless the spirits be warehoused.

Previous to the enactment, of which an epitome has just been given, distillation was confined to a few capitalists; but, with a view of encouraging a fair competition in the trade, and inducing the people to take the spirits directly from the distillers, the act was passed which is now in operation. Formerly, English spirits, although they were made from the finest materials, could not, from the grossness and richness of the wash, be rendered palatable or saleable without under-

going rectification to remove their coarseness and harshness. Accordingly, a number of the traders, denominated rectifiers, were called into action between the distillers and consumers. These rectifiers re-distilled the spirits with the addition of certain drugs and flavouring materials, such as juniper-berries, spirits of turpentine, &c., by which they made a sort of compound called British gin; or else with spirits of nitre, prunes, &c., manufactured an imitation of brandy and other foreign liquors.

All spirits, whether made in England, Scotland, or Ireland, were obliged to pass through the medium of these traders, who were, by a mistaken enactment, made the arbiters of public taste. To the liberal views of the Earl of Ripon, while Chancellor of the Exchequer, must be attributed the correction of the abuse and the destruction of the monopoly. He saw that were the distiller enabled to make a good, pure spirit, not only would there be a direct supply to the consumer, but the liquor would be unquestionably more palatable and wholesome in its natural state, than when compounded and impregnated with such materials as have been described. The only apparent defect in this law is the duty not having been sufficiently lowered to enable the distiller to give the people spirits, on such terms as would allow them to drink punch like the Scotch and Irish. From this the most beneficial effects would ensue, the trade would become prosperous, and an augmented consumption increase the revenue; geneva and brandy would decrease in proportion—smuggling be checked—foreigners no longer enrich themselves at our expense—and an impetus be given to our agriculture. For the four years ended January, 1825, when the duty was 11*s.* 8½*d.* per gallon, the annual average consumption in England was 4,143,606 imperial proof gallons, and for the four years ended January, 1830, the duty then being but 7*s.* the consumption was 7,384,804 gallons, showing a vast increase in consequence of the favourable changes in the law and the lowering of the duty.*

Owing to the alterations which this law made in the spirit trade, it was amongst other things enacted, that no person could carry on the business of a rectifier, or compounder of spirits, with a still less than 120 gallons content. A house employed for this purpose cannot be within a quarter of a mile of a distillery; nor can any distiller nor rectifier carry on the business of a brewer, maker of sweets, vinegar, cider, or perry, or be a refiner of sugar on the same premises; while over the gate or entrance of every such establishment, the name of

* Parl. Papers, No. 469, 27th May, 1830.

the proprietor with the words, "Rectifier or Compounder," must be painted in large characters. Rectifiers and compounders are obliged to charge the still with a quantity of liquor in the proportion of not less than seven parts in ten of the whole quantity the still is capable of holding, the head included; and every such still must remain so charged until the rectifier or compounder shall draw off the spirits: the whole quantity is to be worked off within sixteen hours from the time of the officers taking the account of it. As soon as the work has ceased, the head, if not permanently soldered to the body, must be taken off and secured until the work recommences under the superintendence of the officer. All spirits received into the stock of a rectifier or compounder, must remain in bulk until an account of the strength and quantity be taken by the officer and calculated in proof gallons. Rectifiers may send out compounded spirits at any strength not exceeding 17 per cent. under proof, and in any quantity not less than two gallons. Any private person having more than eighty gallons is accounted a *dealer*, and subject to all the pains and penalties of an unlicensed trader.

While treating of the beverages of England, those of Jersey, Guernsey, Alderney, and Sark, should not be overlooked, though not celebrated for any peculiar species of liquor, if we except the great quantities and excellent qualities of the Jersey cider. Orchards are attached to almost every farm in the island, which are very productive and well-cultivated. Cider is a principal article of export, and so extensive, that the doors of the farm-houses are generally made very wide, and are arched over for the facility of moving the cider-casks. Parsnips are a cheap article of agriculture; they form the principal portion of the food of both man and beast, and are much used in fattening geese, hogs, and horned cattle. Distillation in those islands is sometimes carried on to such extent as to afford a considerable quantity for exportation. In 1829, there were sent into England 29,503, and in 1830, 31,774 proof gallons of spirits, the joint produce of Guernsey and Jersey.* From the former, in 1833, there were exported 116,832 gallons of cider, and 19,568 gallons of potato spirits; of both of which there is a very considerable consumption on the island. The latter island is so productive of cider, that in 1831, there were exported to England 50,000 hogsheads; and it is thought the home consumption, with what was sent to Newfoundland and other foreign parts, amounted to as much. When the extent of this island, which is but twelve miles in length and six in breadth, is con-

* Parl. Paper, No. 531, 10th June, 1830.

sidered and the wonderful quantity of this liquor which it affords, it is not surprising that it has been denominated a *sea of cider*.

The Aborigines of Scotland, having been principally shepherds ignorant of the arts, their drink must have been as simple as their labours, and as limited as their knowledge; but as luxury increased, and the toils of agriculture became irksome, it is natural to conclude that their inventions in fermented liquors would proportionably advance, and that they would seek to dissipate their care and elevate their spirits by some sort of beverage. This solace they are said to have found in an intoxicating drink, called by their poets, "the joy of the shell."*

Thus Ossian—"Now on the side of Morna, the heroes gathered to the feast. A thousand aged oaks are turning to the wind, and the souls of the warriors brighten with joy."

In the Western Islands, many of the customs of the ancient Caledonians and Britons are still preserved, and, amongst others, the old manner of drinking. In former times, large companies assembled, composed principally of the chief respectable men of the islands. This assemblage was called a *sheate*, *streah*, or *round*, from the company always sitting in a circle. The cup-bearer handed about the liquor in full goblets or shells, which the guests continued to drink until not a drop remained. This lasted for a day at least, and sometimes for two days, and in this practice our *round of glasses* is supposed to have originated. During the revel, two men stood at the banquetting door with a barrow, and when any one became incapable, he was carried to his bed, and they returned to dispose of the others in the same way. Sir Walter Scott, in a note to "The Lord of the Isles," states, that this custom was still in existence, and relates an anecdote of a gentleman of temperate habits, who, forming one of a company of this description, although permitted to remain neutral, was obliged to submit to the ceremony. Martin, in his History of the Western Isles, says it was deemed a breach of hospitality among persons of distinction to broach a cask of *aqua vitæ*, and not see it finished at the time. If any of the party retired for a few minutes, he was obliged, on his return, before he sat down, to make an apology in rhyme for his absence, which if unable to perform he was compelled to discharge such a share of the reckoning as the company thought proper to impose. This custom, which is yet prevalent, is termed *Beanchiy Bard*, signifying *the Poet's congratulation*.

The ancient inhabitants made a liquor by bleeding the *birch trees*,

* Ossian, vol. ii. p. 9, and Transactions of the Society of Antiquaries of Scotland.

which were common in the country. They also fermented a beverage with honey, bees being very plentiful in the woods, and *mead*, a drink of the same description, is still used in the western parts of the kingdom. In process of time, when grain became abundant, they brewed an ale which was called *loin*, a word signifying provisions ; this is probably the malt drink which Buchanan calls *vinum ex frugibus corruptis*. Some say they made a drink from the juniper, and others that they made one from heath. But at this remote period, it would be both idle and unprofitable to endeavour to determine a matter so unimportant, and concerning which, there are, I believe, no records. Yet, it is reasonable to presume, that the Scotch were not less expert than their neighbours in the preparation of all those liquors, that were common to other nations in the same circumstances. I shall not attempt to trace the progress of their inventions in this respect, but descend to modern times, in which we have certain data and unquestionable information.

In 1272, a duty by gauge was placed upon wine ; but it was not until 1482, that we find the manufacture of beer or ale in Scotland noticed by the government, although it abounded in that country long before.* At the union, a duty was introduced similar in point of regulation to that imposed in England, on *two-penny ale*, which was the principal *malt drink* in use at the time ; it was rated at 2*s.* 1¼*d.* per barrel. Several alterations followed, but in proportion to the advance of the duty, the work of the brewery decreased.

In 1760, the excise stood at 3*s.* 4¼*d.* per barrel.

The state of the beer trade in Scotland will appear from the subjoined number of barrels brewed in four successive years, viz :—

		STRONG.	SMALL.
Years ended 5th Jan.	1827	122,158	271,335
	1828	112,067	241,293
	1829	118,943	247,443
	1830	111,071	229,384

From this it is evident, that the beer trade in Scotland for these periods was rather on the decline, a proof that when the tax on any article is too high, the people will be disposed to seek some other substitute. The late abolition of the duties may have some effect in restoring this trade, but it is difficult to bring back the taste of a nation when once diverted from any peculiar habit of indulgence.

The *gross* amount of the revenue raised on beer in Scotland in 1821, came to £84,847. 6s. 10¼d. and the *net* sum to £71,324. 0s. 2¼d.† In 1827, the amount of duty was £74,015 6s. 0d., and in 1828, it

* Acts. Jac. 3. c. 89.

† Finance Account, 1822, p. 41.

came to £76,385. 1s. 0½d.* The quantity of malt made in 1821 amounted to 1,299,497 bushels, and in 1822 to 1,347,431 bushels.† The gross amount of revenue in 1821, came to £231,605, 9s. 3d.; net £231,480. 10s. 10d.; and in 1822, to £183,071. 6s. 7d., net £157,258. 19s. 1d. The quantity of malt used in the breweries for 1827 was 77,873 quarters, and for 1828 was 83,080 quarters. The total revenue derived from malt in 1827 was £340,077. 14s. 3d., net £124,864 2s. 1d., with a drawback of £214,876 12s. 10d.; and in 1828, the gross amount £484,193 14s. 0d., net £185,856. 17s. 10d., with a drawback of £298,224. 12s. 2d., these drawbacks were on account of malt used in distillation.

In 1830, the gross revenue on malt was £514,392 12s. 8d., the net £179,153. 6s. 0d., leaving a drawback on the gross quantity of £334,438. 17s. 0d.‡ The following is the quantity of malt made in Scotland, and the amount of duty for the years specified :—

YEARS.	BUSHELS.	AMOUNT OF DUTY.
From Barley, 1831	3,321,702	£429,053 3s. 6d.
Bigg, do.	865,249	86,524 18s. 0d.
Barley, 1832	2,971,297	383,792 10s. 5d.
Bigg, do.	743,033	74,303 6s. 0d.
Barley, 1833	3,433,862	443,540 10s. 2d.
Bigg, do.	868,171	86,817 2s. 0d.
Barley, 1834	3,580,758	462,514 11s. 6d.
Bigg, do.	910,534	91,053 8s. 0d.
Barley, 1835	3,604,816	465,622 1s. 4d.
Bigg, do.	854,737	85,473 14s. 0d.

The regulations, under which the beer trade in Scotland and England is conducted, since the passing of the late Act, are the same.§ Every brewer is obliged to pay license in proportion to the quantity of malt used in each year, terminating 10th October, with a drawback of 5s. on every barrel exported to foreign countries, which drawback is obtained by the brewer swearing that the quantity of malt employed in making the beer, was in the proportion of two bushels imperial measure for every barrel of thirty-six gallons. Every brewer must make entry with the excise officer of his premises, rooms, and utensils for brewing and storing the beer and malt; nor is he to have raw or unmalted grain in his concerns under a severe penalty—a restriction designed to prevent illicit or improper practices. By the Parliamentary returns of 1830, there were in Scotland 168 licensed brewers, 26 retail brewers, 17,713 victuallers,

* Parl. Paper, No. 30, 18th Feb. 1829. † Parl. Paper, No. 512, 2d July 1823.
Parl. Paper, 16th August, 1831. § William IV. c. 51.

and 268 victuallers who brewed their own beer; while in 1836, there were 242 licensed brewers, with 17,062 victuallers, and the malt consumed in the breweries of Edinburgh and throughout Scotland was, for five years ending 5th January, 1837, as follows :—

YEARS.	BUSHELS.		BUSHELS.
1832,	Edinburgh, 432,507	Scotland,	990,056
1833,	 477,388	.....	1,085,867
1834,	 477,485	.....	1,139,601
1835,	 474,310	.....	1,138,180
1836,	 591,945	.....	1,281,102

The Scotch were familiar with all the wines used in Britain at an early period of their history; but have generally evinced a greater partiality for ardent spirits. On an average of the imports and exports of wine ended 1827, there were 436,055 imperial gallons imported, and 62,124 exported, leaving for the consumption of a population of 2,365,807 only 373,931 gallons, being to each individual something better than a pint and one-fifth annually. Home-made wine is a manufacture not carried on to any great extent, nor is it an art of great antiquity in Scotland. The home-made wine for fifteen years ended 1820, was but 806 barrels, 22 gallons, the duty on which amounted to only £1,905. 8s. 5d.; and for four years ended 1834, the number was 23,090 gallons, yielding £577 5s. 0d. when the duty entirely ceased.

Previous to the equalisation of the duties, the consumption and export of wine were rather on the decline, chiefly owing to the excess of the imposts and the port charges, which placed almost every description of wine beyond the reach of the middling and inferior classes. Since the late regulations, the trade has increased; but the improved quality and the low price paid for the spirits have materially tended to divert the public taste from the use of wine, beyond what is sufficient to supply the tables of the opulent, or to gratify the palate of the luxurious.

On reviewing the Scotch system of distillation prior to the present laws, the difference is found to be considerable. At the Union, in 1707, the duty on spirits was much the same as that levied in England. The whole quantity made in the year 1708, (the earliest date of any regular account for Scotland,) was 50,844 gallons. The manufacture rapidly increased until the year 1756, at which period the distilleries yielded 433,811 gallons of spirits; an additional duty was then imposed, and the quantity decreased accordingly. About twenty years after (1776,) commenced the export to England, which again increased the manufacture.

The mode of collecting the duty in Scotland, till the end of the

year 1784, was by an actual account and survey of the quantity of *wash*, *low wines*, and *spirits*, made by the distiller. From the 1st November, 1784, the whole duty was rated on the wash thus :—for every 100 gallons, the distiller was allowed a credit for 20 gallons in his spirit stock *one* to *ten* degrees over hydrometer proof. The same regulation was established at that time in England; but in Scotland it only continued for about two years, and in 1786 gave way to the licensing system. By this plan, the distillers in the Lowlands were charged at the rate of £1. 10s. 0d. per annum for every gallon contained in each still; and in the Highlands only £1.; the still in the latter place was limited to a certain size, and the spirits to be made were not to exceed a defined quality, while a line of demarcation was drawn for the sale of their respective spirits. At the same time, it was thought that a still could not be worked more than from four to seven times in the week. It was discovered, however, that the distiller could work with greater despatch and make a larger quantity of spirits than was previously supposed. Upwards of 300,000 gallons were stated as the amount smuggled into England in 1787, over and above all that had been brought to charge.

The duty on the contents of the still was raised in 1787 to £3; while, at the same time, such stills as were entered for the English market were exempt from this duty, and the spirits charged at the rate of 2s. 6d. a gallon on their importation into England.

Improvements continued to be made in the method of distilling rapidly, in consequence of which the duty on the capacity of the still was augmented, successively, from £3 to £9, £18, £54, £108, and lastly to £162. Such was the increase of rapidity in work, that in 1799, a still of forty-three gallons could be wrought off in *two minutes and three-quarters*, or nearly *twenty-two times in an hour*.* This despatch was principally effected by altering the still from its original, deep, and contracted form, to a shallow and broad construction, by which a larger surface of the liquid was exposed to the action of the fire. To so great a height was this improvement carried, that a still of forty gallons, of which the head formed *ten*, has been known to be *four feet broad*, and only *three or four inches in altitude at the sides*.†

In 1802, an Act was passed, imposing, in addition to the existing license of £162, an obligation of 2,025 of spirits per gallon of still-room, at the rate of nine-pence per gallon, and enacting that the wash brewed, should produce, at least, 11 per cent. This law placed the

* Vide Dr. Jeffrey's Report.

† For a view of an improved still of this kind, see the Philosophical Magazine, vol. xi.

Scotch distillery on a very respectable footing, and the trade continued so regulated until 1814, the only alteration in the interim being an increase of duty on account of the wash, and an increase of the per-centage to 16½ gallons of spirits for every 100 gallons of wash, but in that year the whole scene changed; the English system was put into force by one sweeping act of Parliament, and the old Scotch plan was laid aside. Rapid work, small stills, and large chimnies, gave place to *lob*, large stills, chains, and locks. Numerous alterations in the internal economy of distilleries followed, and much money was thrown away by the alterations consequent on the change of system. The persons engaged in the Scotch trade, not being then an united body, tamely submitted to the measure, some from curiosity, and some from a notion that opposition would be useless, while others, being rich, were indifferent. On the part of the government the attempt was made with the best intentions; that of promoting one uniform system, but in making the change, the different materials, or, in other words, the difference between the Scotch and English barley and malt, was quite forgotten. The English barley and malt might yield a produce of 19 per cent. when the Scotch could not. Another important matter overlooked, was the want of rectifiers in Scotland, to reduce the spirits made under the Act to a marketable standard. While 11 per cent. was the medium of calculation, under a former law, for the making of wash or potale, excellent spirits were made, sold, and consumed: spirits from potale, producing 16½ per cent, were barely tolerated; but the spirit made from wash, producing 19 per cent., was scarcely drinkable, being so harsh and ardent as to be unfit for punch and quite unsaleable. The consequence was ruin to many respectable distillers, as well as great injury to the revenue by the production and smuggling of Highland whiskey—a liquor, which, from its mildness and good flavour, was more consonant to the tastes and habits of the Scotch people. In the following year, great amendments were made, the old Scotch plan was revived, grafted on a continuation of the English system. This, however, was found not to answer, as the trade gradually declined every year, until 1817, when it appeared by the returns of the sales of legal spirits, that another and more effectual change was necessary. The trade had, in a great measure, got into the hands of smugglers, and thus reduced to an illicit traffic, flourished in different parts of the country beyond all conception. In this state of things, all systems, English as well as Scotch, or mixtures of either, ceased at once, all monthly or yearly obligations were dispensed with; 10 and 12 per cent, according to the gravity of the worts, were substituted for 19 per cent; and what is

now termed the Scotch system, or rather a new system, took place. The law which introduced this alteration, brought with it a lowering of the duty, and served to correct many of those abuses which prevailed to an alarming degree. This law was so framed, that the manufacturer could be accommodated to the gravity of the wash, from which he wished to distil and pay duty in proportion to the saccharine matter obtained from the grain, thus :—

From 100 gals. wash of	81lbs.	gravity.....	15 gallons spirits	were required of a strength equal to 7 per cent over hydrometer proof.*
	75	do.	14 do.	
	70	do.	13 do.	
	65	do.	12 do.	
	60	do.	11 do.	

But the act has since undergone modifications, and as its operations have extended to Ireland, a full explanation of the whole will be found under that head.

The method of distilling in Scotland is much the same as that practised in England ; and the process observed in the preparation of the wort or wash is nearly the same.

The spirits manufactured from grain in Scotland are made either from malted barley or bere and bigg, which are both grain of the same nature, but inferior in quality to barley ; or from a mixture of such malt, with barley or bere, raw or unmalted. Wheat is sometimes used, but its high price in general limits its distillation.

The malt, or mixture of malt and raw grain, when ground, is mashed in a quantity of hot water, either by machinery, or by workmen, with rakes provided for the purpose. When the fluid becomes fully impregnated with the saccharine, or farinaceous and fermentable part of the grain, it is drawn off into an underback or receiving-vessel, adjoining the keive, and in that state it is termed worts. From the underback it is pumped into coolers, and allowed to cool down to a certain degree of heat, and is then run into tuns, or backs, where, with the addition of yeast or barm, it ferments, and when attenuated, is called wash. From this wash, *imperfect* spirits, or *low wines*, are distilled ; and when they have undergone a second distillation, they are sold in Scotland for consumption ; but in England they are not commonly used for drinking in that state, but pass from the distiller to the rectifier, who, by further distillation, prepares them for the consumer in the form of compounds. Dr. Thomson, Professor of Chemistry in the University of Glascow, is of opinion, " that the vast quantity of porter-yeast used by the Scotch distillers, and often in a state almost approaching to putrefaction, cannot but have an injurious

* 58 Geo. III. c. 50, 1 Geo. IV. c. 74, and 3 Geo. IV. c. 52.

effect upon the flavour of their spirits, and has undoubtedly contributed to the reputation of Highland over Lowland whiskey. The Highland distillers, especially the smugglers, have not the means of procuring yeast from London. Of course, their wash is less perfectly fermented, but the flavour given to the Lowland whiskey by the yeast may be distinctly perceived; and, on that account," says the Dr. "we are disposed to suspect that the flavour of the spirits always suffers in proportion as the fermentation is brought nearer a state of perfection."*

The character of the Scotch whiskey ranks high, and it continues to compete with any other spirits made in the United Kingdom. For this, it is, no doubt, indebted to the care and attention bestowed on its manufacture, as well as to the selection of the materials. The large quantities of malt that have been consumed in the Scotch distilleries, help to raise its reputation, although imputations were cast upon the manufacturers, insinuating that all spirits said to be produced by them from malt were made in the ordinary way, by a mixture of malt and raw grain. But without entering minutely into this matter, it is certain, that the traffic in spirits has considerably increased to the great advantage of the Scotch distiller. Making spirits purely from malt was long considered a desideratum, and for this purpose the legislature granted an allowance or drawback of 1s. 2d. for every gallon of proof spirits made wholly from malt, with the view of increasing legal distillation in the Highlands and throughout Scotland generally. The taste of the people was habituated to this description of spirits, and the supply of this article was commonly obtained from illicit distillers, to counteract which and to bring a palatable spirit into the market were the great object of the enactment. The premium of 1s. 2d. was confined to the spirits consumed in Scotland, for in case of export to England, the whole duty was paid without the allowance of any drawback. The consequence was that illicit distillation greatly decreased, as is evident, when it is known that in 1821, the year preceding the grant of the drawback, there were in Scotland only 106 legal distillers, but in 1828, they amounted to 273. It may be here remarked, that as there were no markets for the grain raised in the Highlands, recourse was had to illicit distillation; but, since the encouragement given by the recent laws, a ready consumption is afforded for the superabundant produce of grain, and the land-owners now find it their interest to co-operate with the government in the suppression of illicit traffic and the encouragement of a fair trade. On

* Supplement vol. to Encyc. Brit. art. Distil.

the whole it appears that the envied advantages which the Scotch manufacturers have over the other distillers of Great Britain, arise from several local and other circumstances, among which may be reckoned the abundance and cheapness of barley, the lowness of fuel, and the permission of bonding spirits free of duty. Whether, however, the Scotch possess any advantage over the English distiller upon any other grounds than that of the lowness of the duty, may be questioned. To render the present distillery laws unobjectionable in every part of the empire, and to remove that envy and jealousy which must always exist, so long as there are imposts in one portion of the country that are not applicable to another, it might be prudent to equalise the duties everywhere, putting all the distilleries in the United Kingdom on the same footing. The late act has approximated towards this object, and it seems a measure better calculated than any other to put down illicit practices and to silence all complaints and remonstrances. Neither would lowering the duty in England have a tendency to produce any immorality on the part of the people more than in Scotland, where no extraordinary evil consequences have arisen from the unrestricted use of spirituous liquors. It is a fallacious assumption, that because the quantity of spirits made under a low duty is greater than under a high duty, that the consumption of the spirits is increased accordingly ; for, as there is little temptation to smuggle, a preference is given to the legal article, and hence the apparent increase of consumption where there is none in reality. Indeed it might be a question in political economy and moral philosophy, whether, if there were no duty whatever on spirits, but a corresponding impost on some other article, it might not be equally serviceable to the revenue of the country, and the correct habits of the people.

In distillation, the same precautions are not requisite on the part of the legislature to secure us as good an article as is required in the manufacture of ale or beer, in which there are so many opportunities for adulteration. In spirits, it is otherwise, since it is well known that the unrestricted produce of the unlicensed stills has given a beverage more esteemed than that sanctioned by the law, although supported by premiums and other influential inducements. As a duty on spirits has become necessary both in a financial and moral point of view, its equalisation is calculated to obviate all objections on the part of the manufacturer, to stimulate all to honorable competition, and finally prove successful in opposition to foreign and home smuggling, which have so long proved destructive of the happiness and good order of a large portion of the community.

Some of the distilleries in Scotland are upon a very extensive scale

while others again, particularly in the Highlands, are of a very small magnitude, the whole being often comprised in the compass of one apartment, the content of the whole still being, in many cases, little more than 40 gallons, while the large concerns in the Lowlands range so high as from 2000 to 10,000 gallons and upwards. In some concerns there are several stills of great dimensions for the manufacture of *wash* and *low-wines*, for the making of which the regulations are much the same as those in England, the distiller having it at discretion to work either quickly or slowly.

The produce of these distilleries, with the disposal thereof, stands as follows :—

			EXPORTED TO		
	Years.	Galls. made.	England.	Ireland.	
Year ended Jan. 5	1828,.....	9,105,275	2,438,706	679,021	Imperial Measure
	1829,.....	10,117,027	3,232,513	986,368	
	1830,.....	9,649,070	3,008,686	811,243	
	1832,.....	4,861,478	2,363,768	487,178	

The quantity which paid duty for home consumption for the same years was, in

YEARS.	IMP. GALL.	AMOUNT OF DUTY.
1828,.....	4,752,199	£673,228 3s. 10d.
1829,.....	5,716,180	809,792 3s. 4d.
1830,.....	5,777,280	818,448 0 0

The spirits charged with duty in Scotland, were, in

1831, ...	5,700,689	£ 950,114 16s. 8d.
1832,.....	4,861,478	810,246 6s. 8d.
1833,.....	5,988,556	998,092 13s. 4d.
1834,.....	6,045,043	1,007,507 3s. 4d.
1835,.....	6,013,932	1,002,322 0s. 0d.

By 6th George IV. chapter 58, a duty of 2s. 10d. per gallon was imposed on all spirits distilled in Scotland or Ireland ; and by 1st William IV. chapter 49, an addition of sixpence per gallon on all spirits made in the empire ; but by the 4th and 5th William IV. chapter 75, from the first September 1834, all spirits made in Ireland were reduced to 2s. 4d. per gallon ; but no alteration was made in Scotland or England.

The home-made spirits and beer exported from Scotland to foreign countries were—in

1830,.....	Spirits,	12,807	gallons.....	Beer,	2617	barrels.
1831,.....	do.	10,955	do.	do.	2935	do.
1832,.....	do.	13,371	do.	do.	2337	do.
1833,.....	do.	19,531	do.	do.	2854	do.
1834,.....	do.	25,141	do.	do.	2889	do.

Before distillation had arrived to any degree of perfection, the imports of foreign spirits were, considering the circumstances of the country, in a proportion perhaps greater than those of the sister kingdom, although the commerce of the latter began to establish itself long before. The great supply, prior to the introduction of rum, was drawn from France and Holland; but without entering into detail, it may suffice to shew that the actual quantity of rum, brandy, geneva, and other foreign liquors that paid duty, with the amount, was for—

YEARS.	GALL. RUM.	GALL. BRANDY, &c.	£.	S.	D.
1828,	185,214	42,756	126,952	7	5
1829,	188,189	45,749	130,872	4	11
1830,	152,461	43,228	112,853	15	9*

By the foregoing returns, the yearly average of spirits which paid duty for home consumption is 5,415,186 of rum, and other foreign liquors 219,165, in all 5,634,351 imperial gallons, which, for a population of 2,365,807, gives little more than 2 gallons $3\frac{1}{2}$ pints to each individual annually—a consumption sufficiently moderate to entitle the Scotch to the character of a temperate people.

Throughout the Highlands, and the various islands connected with Scotland, the benefits of the new distillery laws have been sensibly felt by the suppression of smuggling, and by giving an article to the people equally agreeable as that which was formerly clandestinely obtained.

Distillation is now legally conducted there to such extent, that the Highlands send spirits to different parts of the Lowlands and elsewhere; and this intercourse is considerably facilitated by the several new roads lately constructed under the auspices of the government. It is pleasing to observe that this freedom of communication has given an impetus to industry, and called into useful activity the exertions and energies of the people, to surmount the difficulties thrown by nature in their way, and even to render trackless heaths and rugged rocks fertile. This northern portion of Scotland has long been eminently distinguished for its hospitality, so much so, that it is said the doors of the houses are left open at all hours as a general permission for strangers to enter and partake of the kindness of the inmates without ever asking their names, on which occasion whiskey forms no small portion of their entertainment:—even on leaving a house in which a person has been hospitably entertained, it is a common practice for the host to accompany his guest to the door, first drink a glass of spirits himself, and afterwards to present another to his retiring

* Parl. Pap. No. 211—26th March, 1830.

friend. This ceremony, denominated *door-drink* (*deoch-a-doras*), is similar to the parting cup amongst the natives of Switzerland, and precisely that used at present in Ireland under the same appellation. A like practice is prevalent in the Hebrides, where the baneful custom of taking spirits in the morning is generally observed. As soon, says Dr. Johnson, as a man appears in the morning, he swallows his glass of whiskey, and no man is found so abstemious as to refuse this morning dram which they call a *skalk;* but, notwithstanding this habit, he did not consider them a drunken race.* Ossian celebrates the hospitality of the Highlanders in the following beautiful strain:—"The towns of Cathmor rose on the banks of Atha; seven paths led to his hall; seven chiefs stood on those paths and called the stranger to the feast. But Cathmor dwelt in the wood to avoid the voice of praise.† Cathmor was the chief of Clutha. The feeble dwelt in his hall. The gates of Cathmor were never closed; his feast was always spread. The sons of the stranger came and blessed the generous chief of Clutha. Bards raised the song and touched the harp; joy brightened on the face of the mournful."‡

At funerals, considerable quantities of spirits are consumed, and after the ceremony of interment is over, the friends of the deceased are invited to a plentiful repast, where whiskey is put about very lavishly, and the evening of the day of sorrow closes as a festival of revelry bordering sometimes on intoxication.

It is to be regretted, that notwithstanding the encouragement which the present statute affords, smuggling still prevails to some extent in the Highlands, and also in the islands, both affording places of concealment for that purpose in a pre-eminent degree, as they abound with deep ravines, isolated glens, rocks, and solitary valleys.

An adventure of a singular nature befel a gentleman who lately visited the Hebrides. While making some geological researches, he was induced to descend a precipice to examine the nature of the strata of a rock, and entering a cave that attracted his attention, he was astonished to hear the noise of persons, as if revelling at a banquet. Being fearful of danger he was about to retire, when he was accosted by a person inside and requested to advance. Considering compliance the best policy, and his curiosity being a good deal excited, he followed the individual into the cavern, and was no little astonished to find himself introduced to a number of persons seated on benches round a

* Journey to the Western Islands of Scotland.

† Temora. ‡ Calthon and Colmar.

table, regaling themselves with as much apparent satisfaction as if in a palace. On looking round, he perceived a number of casks of spirits ranged as if in a cellar, with old swords and other weapons of defence, plainly indicating that he had fallen in with a party of smugglers. Apprehensive that he was an officer of the revenue, he was eyed with great distrust, and questioned most particularly as to his pursuits; but finding that his profession was of a different nature, they told him candidly what they were, treated him with much kindness, and, after enjoining secrecy, suffered him to depart, but not without partaking of a hearty glass, and a share of all the luxuries of their solitary grotto.

According to Pennant, the people of the Hebrides extract an acid for punch from the berries of the mountain ash, and also distil from them an agreeable spirit.

If we admit with Boethius that there formerly existed in Cantyre an alembical liquor called *usquebaugh* drawn from thyme, mint, anise, and other fragrant herbs, it may be inferred that the knowledge of its manufacture was obtained from Ireland, where that liquor was so superior and prevalent. In Dr. Johnson's time, whiskey was very plentiful in the Hebrides; several stills were then in the island of Cal, and more spirits were made than the inhabitants could consume.

Martin, in his description of the Western Islands, says that in some places they preserve their ale in large earthen vessels, and think they are better for that purpose than wood. When the ale becomes flat, they render it brisker by the immersion of a hot stone or a toasted barley cake; some use a hot malt-cake for the same purpose. The natives preserve their yeast by an oaken withe, which they twist and put into it, and for future use keep it in barley straw. This withe, which is from four to six inches about, is boiled in wort, well dried, and being steeped again in wort, causes it to ferment and produces yeast. The rod is cut before the middle of May, and being preserved and used in the manner stated, serves for a length of time—one of these fermenting withes has been known to answer the purpose for upwards of twenty years. In the island of Lewis, which affords bere, oats, and rye, usquebaugh is distilled; this *usquebaugh*, when three times distilled, was called *trestarig;* and, when four times distilled, *usquebaugh-baul*, more than two spoonsfull of which were sufficient to endanger life.

In Harris, the natives in brewing beer, use the seeds of a white wild carrot as a substitute for hops, and say it answers the end sufficiently well, besides giving the drink a good relish.*

* Martin's Western Isles, p. 192.

Every family of distinction in those islands had a cup-bearer, who always filled and carried the cup round the company, taking the first draught himself. This office was hereditary, and a town with land was the reward of the service. There was another office held in the Highlands at a symposium, or drinking-bout, by a person called a *henchman*, whose business was to attend his master, stand behind his chair or at his haunch, hence the appellation. The duty of this person was to act as secretary, and to be ready on all occasions to venture his life in defence of his chieftain. In the isle of Skie, the root of Carmel or Knaphard *(Argatilis Sylvaticus)* was used to prevent drunkenness, and for its aromatic flavour preferred to spice in the distillation of aqua vitæ.

In St. Kilda, the juice of nettle-roots, mixed with barley-meal dough, was used for yeast in the brewing of ale, which produced all the desired effects. Though these islanders indulge in the use of intoxicating liquors, yet they are in general a temperate people, and live to a great age. Martin records the instance of a man named Tairville, who arrived at the age of 180, and who never drank any malt liquor, distilled waters, nor even wine.

In Kirkwall, the capital of the Orkneys, there were two licensed distilleries, and one in Stromness, with a few small breweries, but they did not afford a sufficient supply of drink for the inhabitants. These islands exhibit many vestiges of the inroads of the Scandinavians, of the worship of Odin, with several pagan tombs, monuments, or temples for sacrifices. In the graves have been found various relics of antiquity, implements of war, urns of pottery containing human bones, glass beads, and cups of the same material, capable of holding half a pint, shewing that the inhabitants were familiar with the drinks of their ancient northern neighbours.

In the Shetland islands, the brewing of ale was once quite familiar, but, owing to the duty on malt and the poverty of the inhabitants, it has nearly fallen into disuse. Formerly, it is said, they possessed the art of distilling a spirit from heather, a secret which has perished along with the other institutions of the Picts. It is certain, however, that not more than a century ago, they used heather in brewing, as hops are used at present, but further than this, nothing certain is known.*

Some of the lairds and respectable land proprietors still make ale for domestic use, and which is accounted a pleasant, wholesome beverage. The drink most in use is *bland*, a preparation from the serum of buttermilk, which is found in almost every house.

* Edmondston's View of the Zetland Islands, vol. ii. p. 50.

Bland, which is of Scandinavian origin, is made by pouring boiling water into new-churned buttermilk, when the curds sink to the bottom, and the liquid, after standing a little time, undergoes a slight fermentation: in a few months it becomes as clear as water, possessing a very agreeable portion of acidity. The Icelanders use a similar beverage under the same denomination. The Shetlanders are remarkable for hospitality, and a stranger finds no difficulty in procuring accommodation at a moderate charge, where inns are not convenient. The law enacted in the reign of James the I. did not extend to the Shetland islands, otherwise the individual might be without lodgings, since that act prohibited persons putting up at any places but *inns*, or, as they were termed, hostelries. The resident gentlemen have not only comfortable dwellings, but plenty of the necessaries and most of the luxuries of life. In ancient times, wine was so abundant, that at marriages it was customary to wash the feet of the bridegroom in a tub of wine. The Shetland and Orkney islands are supplied with spirits and other liquors, partly from their own distillation and partly from Holland, England, Scotland, and even, during the fishery season, from the northern parts of Ireland.

In Ireland, where distillation is carried on to greater extent than in any other portion of the world of equal magnitude, and where it forms a branch of such great commercial importance and enterprise, the speculative mind is naturally led to enquire into the causes which have produced such wonderful efforts in this branch of trade. At what time, therefore, this art was introduced into Ireland is a subject equally interesting to the artisan and the philosopher. The better to come to a correct conclusion on the point, it will be necessary to take a view of the state and progress of the arts and of agriculture in this country from a remote period. Ireland, it is admitted, was the seat of learning and the sciences, when all the other parts of Europe were involved in darkness. From the early settlement of eastern emigrants and the frequent intercourse with foreign nations, it might be thought that the knowledge of distillation, if such an art were then known, must have been coeval with the first settlers.

Vallancey asserts on good authority, that the Bramins, or as some will have it, the Druids, came into Ireland along with the Scythians, and, according to Gebelin, brought with them numerous improvements in philosophy and the arts.

On comparing the customs of the Phœnicians and Irish, a great similarity appears. Both worshipped Bel, or the sun, the moon, and stars, and many of the practices of that intelligent commercial people were prevalent in Ireland, because a constant intercourse was kept up

between our ancestors and that nation. Vallancey shews that every thing we owe to the Milesians had an Oriental origin, and Sir William Jones is of opinion that the Goths and Hindoos had originally the the same language, gave the same appellations to the stars and planets, and had the same religious rites and opinions, as also that the Greeks took their pagan deities, with the fables and the whole machinery of their mythology, directly or indirectly, from India, where all are still found in the Sanscrit books and Indian temples. Cæsar tells us that the Druids were great astronomers, and it is curious that the Irish word for a year, literally signifies the circle of Bel, or the sun. The ancient customs of the country proclaim, in a great number of other instances, their Eastern descent. The practice of employing mourners to lament the loss and sing the praises of the deceased, is manifestly derived from the Jews, as well as that of drinking at wakes, which, it is to be lamented, has been too often abused. This excess was carried to such a height by the Israelites, that the Sanhedrim made a decree that ten cups only should be drunk on such occasions.* Homer's account of the dirges sung by the women at the funeral of Hector, proves the antiquity of the cry or dirge, as used by the ancient and modern Irish. In Russia, a similar practice prevails, when *mead* is carried to the grave to be drunk as a parting offering to the deceased.

Pearce, during his residence in Abyssinia, observed that a cry similar to that in use in Ireland, was common amongst the Abyssinians at their funerals, particularly at the burial of persons of distinction. There are numbers of men and women in that country, who gain a living by making rhymes and attending at cries ; and if they are superior poets, they receive high wages in corn, cattle, and cloth. He was acquainted with a very handsome middle-aged woman, who, though she had a large estate to live on, had studied poetry from her infancy, and attended gratuitously at all cries, in order to distinguish herself. The same description of women are employed to conduct the cry, even at the present day in Ireland ; and many of them are very happy in their recitations on those occasions. To such effusions the celebrated Curran attributed his early predilection for poetry and oratory.

Christianity, which carries with it civilisation in all its bearings, was first introduced into this island from Asia, and not directly from Rome, all concurring to prove the extent of our intercourse and com-

* Vide Mathew ix. 23., also 2 Chron. xxxv. 25.

munications with other nations. If the Phœnicians, Egyptians, or any of the Asiatics, were, at an early period, acquainted with distillation, it is likely that they would have introduced it into Ireland, where they came in great numbers to traffic and to settle. These colonists would also diffuse a spirit of commercial enterprise through the country, which would render its harbours better known than those of the adjacent isles.

Accordingly, we learn from Tacitus, that "the ports and landing-places of Hibernia were better known than those of Britain, through the intercourse of merchants;"* and it appears that in the time of Ptolemy the town of Wexford was familiar to that geographer.† The Leabhar Lecan, or Liber Lucanus, distinctly mentions, that, at a very early period, the Irish had made great progress in the arts, in the dyeing of purple, blue, and green, and in the separation and refining of gold.‡ On the river Liffey in particular, A.M. 2815, in the reign of Tighernmas, there was a great smelting house where *orban* and *orbuid*, white and yellow gold were refined; and a famous artist called Juachadan or Uachadan of Cualane, in the county of Wicklow, brought the manufacture of cups and goblets from this metal to great perfection.

That the art of making glass was early known in Ireland, is certain from the specimens of that and crystal found in the cairns raised in honour of the dead; and this is further confirmed by what has been dug up from the ruins of old buildings, particularly from those of Down, which were rudely painted and scarcely transparent, as if done in the infancy of the invention. We are informed that St. Patrick shewed to Ailbeus, one of his disciples, an altar of beautiful workmanship having a glass chalice at each of its four corners.

The familiarity of any art often prevents an account of it, and hence the paucity of information, which some of the most enlightened writers have in their records, respecting inventions and other matters, a knowledge of the origin of which would be, at the present day, of the highest interest.

If we are to credit our early annalists, magnifying glasses and the use of the telescope were known to the Irish Druids; and that even the polarity of the loadstone was not to them a secret; nor the effects of gunpowder among the arcana of philosophy and the other phenomena of physical science. Hence it is inferred, that the shaking of the Druidical grove near Marseilles, as described by Lucan, and the strange

* Vita Agricolæ, c. 24. † O'Halloran's Ireland, vol. ii. pp. 246, 434.

‡ For the materials used in the art of dyeing, among the ancient Irish, see Walker's Historical Essay on the dress of the ancient Irish, p. 261. 2d Ed. 8vo.

sounds echoing from it, with the flickering blaze issuing therefrom, arose from a preparation of materials similar to gunpowder.

The skill of the Irish in other respects is confirmed by the variety, richness, and splendour of the various articles discovered from time to time in different parts of the kingdom, such as swords, with gold handles, shields of pure silver, helmets and corslets cased with gold, horse-trappings, and even bridle-bits of the same precious metal. The crowns of the ancient monarchs were of pure gold. O'Halloran mentions two he had seen, neither of which had the cross on it, which renders it probable that they were made before the introduction of Christianity.* One of these crowns, Walker, in his Irish Bards, says, was dug up in 1692 in the county of Tipperary, and which is thought to be still preserved in France.†

Our annals relate that at a very early period of the world, A. M. 3355, at Arigiod-Ross, on the banks of the Suir, there was a mint for the coinage of money, where, even before that time, shields and targets of pure silver were fabricated, and a mint was erected at Clanmacnois for the coinage of silver. So rich was the country in the precious metals, and affording so many opportunities to exercise the ingenuity of the artisan, that the tax on Leinster paid annually to the monarch, for a series of 400 years, was in part 6000 ounces of pure silver, 3000 copper cauldrons, 3000 mantles richly embroidered; while Cormac Cas, in A. D. 222, was enabled to bestow 300 ounces of silver in a day as rewards to the bards and literati. Music and poetry were particularly cherished, and had arrived to a degree of perfection unequalled in other countries. To this some of the earliest writers bear testimony: Cambrensis says, "that of all the nations within our knowledge, the Irish is beyond comparison the chief in musical compositions;" and Geminiani, the celebrated Italian Composer, who was struck with the harmony of our airs, declared that "he found none of so original a turn on this side of the Alps." Handel himself confessed he would rather have been the author of Aileen Aroon than of all the music he had ever composed.

Neither were the Irish less attentive to commerce than to the encouragement of the arts, for in the reign of Ollamh-Fodhla, A.M. 3082, amongst other wise regulations of that monarch, were enacted laws for the extension of trade and the improvement of manufactures; and to prevent imposition or breaches of these regulations, sixty persons conversant in those affairs were usually despatched into the different great cities and manufacturing towns to discover abuses, and prevent persons not properly qualified to carry on trade or manufactures to the injury of the country. As a proof of the very

* Hist. vol. ii. p. 92. † Hist. of the Irish Bards, vol. ii. 32.

early intercourse we had with other nations, and with the Carthaginians in particular, it is affirmed, that the victory obtained at Cannæ is much to be attributed to the valour of Irishmen, since the swords found on the field of battle as well as the shields dug up there, were the same as those used by the ancient Irish; and when the Carthaginian and Irish swords were examined by the assay-master of the mint, he pronounced that they were cast in the same mould.* It was even asserted by early writers, and credited by Usher, that Connal Cearnach, master of the Ulster Knights, was actually at Jerusalem at the time of the crucifixion of our Saviour, and that he related the whole story to Cormac, king of Ulster, on his return to Ireland.

From all these circumstances, it is quite evident, that whatever may have been the extent of the knowledge of the arts at those early times, the Irish were familiar with it, whether serviceable or ornamental; and that the use of liquors must have been well known among a people so conversant with the manners and habits of other nations. This opinion is further corroborated by the accounts we have of an order of people during the time of the Druids, called *beatachs*, *brughnibhs*, or keepers of open houses, established for the express purpose of hospitality. No man could presume to assume the title of *Beatach*, who had not seven town-lands comprising seven ploughed lands, he was also to have seven ploughs going, and to be master of seven herds of cattle, each herd containing one hundred and twenty cows; his house was to be accessible by four different roads, and a hog, a beef, and a mutton, were always to be ready for the entertainment of the traveller, and of such houses not less than eighteen hundred belonged to the two Munsters. The keepers of these open houses were distinguished by a garment of four colours, which was a high mark of respect, when it is known that they ranked next to the nobility, who were privileged to wear only five colours. This laudable spirit of hospitality derived from our Scythian ancestors, is, to this day, kept up amongst the various hordes of Asiatics, who are confessedly descended from the same stock. Burckhardt speaks of these houses of hospitality in Syria, and says, that taverns are open in each district for the accommodation of travellers, at the public expense, in which all sojourners are maintained as long as they choose, provided they do not unnecessarily prolong their stay. Hence few of the natives, when travelling, think of putting money into their pockets, because they are sure of being everywhere well received, and of living as comfortably, and perhaps better than

* O'Halloran, vol. ii. Prel. Disc. p. 54.

in their own houses.* A similar practice is observed throughout various parts of the Turkish empire, where houses, termed Khans, are erected for the reception of travellers, which are so endowed that every night the guests are entertained free with a comfortable supper, be their number more or less, according to the capacity of the building.† The *Choultries* in India, which are similar to the *Beatachs* in Ireland, are attended by an inferior Brahmin who resides convenient; and he not only furnishes refreshments, but *congi*, or rice-water, to assuage the thirst of the traveller. In the same manner we are informed, that, in ancient times, noblemen in England were accustomed to keep open houses, where all their vassals and all strangers had full liberty to enter and eat as much as they pleased; from this custom, the title of Lord is derived, which signifies a dispenser of bread.

The Gauls were also remarkable for hospitality, and it is related of Luernius, the king of the Auvernions, that he made an enclosure of twelve furlongs square, in which he regaled all visiters, during several days, with every species of exquisite meat and liquors; and that Ariamnes caused lodges to be erected on the high roads, capable of accommodating four hundred persons, which number he entertained for a whole year. Strangers were not permitted to pass without partaking of refreshments; and, if time would not permit them, to eat, they were compelled to drink.

The caravansaries in the East, or, as they are termed in Persia, houses of hospitality, are, according to O'Connor, in his Chronicles of Eri, the *car-rah-man-saras*, "the seats of the stations for food,‡" or the *Beatachs* once so numerous in Ireland, for the purpose of receiving the distressed, and sheltering the nightly wanderer, to administer to his comforts and protect him from injury. The *Beatachs* were also bound to inquire from their guests at their departure, what they stood in need of, and in what they could be served. The name of the guest, to what family he belonged, or his place of destination, were not to be asked, the whole displaying a magnanimity, a hospitality, and a spirit of humanity, not surpassed in any other country.

The hospitality for which Ireland is so proverbial, has, in some degree, been observed among the more northern nations, as we find in the *Havamaal*, or sublime discourse of Odin: "Be humane and gentle," says that venerable code, "to those you meet travelling on

* Travels in Syria and the Holy Land, p. 295, 351.

† Sir Paul Rycaut's Ottoman Empire, p. 167.

‡ Chronicles of Eri, vol. i. p. 151.

the mountains or on the sea; and to the guest who enters your dwelling with frozen knees, give the warmth of your fire: he who hath travelled over the mountains hath need of food and well-dried garments."*

Many extraordinary instances of Irish hospitality, both in ancient and modern times, might be related as illustrative of the preceding historical facts. One in particular of Mr. Mathews, recorded by Sheridan, in his Life of Swift, is well worthy of recital. This gentleman resided at Thomastown in the county of Tipperary, and possessed an estate of £8,000 a-year. At this place he built a spacious mansion, open at all times for the reception of respectable visitants, and surrounded by a demesne of 1,500 acres, laid out in the most tasteful and improved manner. The house contained forty commodious apartments for guests, with accommodations for servants, and each apartment was furnished with every convenience, even to the most minute article. When a guest arrived, Mr. Mathews shewed him his apartment, saying, "this is your castle, here you are to command as absolutely as in your own house; you may breakfast, dine, and sup here, whenever you please, and invite such of the guests to accompany you as may be most agreeable to you." He then shewed him the common parlour, "where," he said, "a daily ordinary was kept, at which he might dine when it was more agreeable to him to mix in society, but, from this moment, you are never to know me as master of the house, and only to consider me as one of the guests."

During meals, Mr. Mathews took his seat, without any regard to difference of rank or quality. There was alarge room fitted up exactly like a coffee-house, where a bar-maid and waiters attended to furnish refreshments at all times of the day. Here such as chose, breakfasted at their own hours. It was furnished with chess-boards, backgammon-tables, newspapers, pamphlets, &c. in all the forms of a city coffee-house.

A detached room was fitted up as a tavern, into which such of the guests as chose, might retire after dinner and regale themselves with an extra-glass, though there was a moderate supply of wine always at the table in the ordinary. A waiter with a blue apron attended, and helped every person to whatever description of liquor he liked, in the same manner as is practised in public houses, and as if each of the guests were to pay a share of the reckoning.

Here, too, the midnight orgies of Bacchus were often celebrated, with the same noisy mirth as is customary in his city temples, without

* Mallet's Northern Antiquities, vol. ii. p. 144.

in the least disturbing the repose of the more sober part of the family. Games of all sorts were allowed, but under such restrictions as to prevent gambling, and so as to answer their true end, that of amusement without injury to the purses of the players. There were two billiard-tables and a large bowling-green; ample provision was made for all such as delighted in country sports; fishing-tackle of all sorts, a variety of guns with proper ammunition, a pack of buck-hounds, another of fox-hounds, and another of harriers, with twenty choice hunters in the stables for those who were not properly mounted for the chace. So well was every matter arranged, such checks were kept upon the domestics who were of tried integrity, the articles of life so cheap, and the demesne alone furnishing every article save that of wine, liquors, and groceries, that the host's fortune was fully adequate to support this generous and hospitable establishment. No confusion nor disorder ever arose from the multiplicity of visiters, as all was conducted with the same ease and regularity as in a private family. It was an established rule that all might depart when they thought proper, without any ceremony of leave-taking, and the servants were enjoined not to receive any perquisite, as it was considered the highest insult if any offer of that kind were made.

Attracted by the wonderful accounts related of Mr. Mathews, the celebrated Dean Swift resolved to visit him, and to be convinced that the report was neither romantic nor exaggerated. When Mr. Mathews learned that the Dean was on his journey, he immediately despatched a coach and six which met him with a store of the choicest viands, wines, and other liquors, at the end of the first day's journey. On coming within sight of the house, the Dean, astonished at its magnificence, exclaimed, "what, in the name of God, can be the use of such a vast building?" "Why, Mr. Dean," replied Dr. Sheridan, who was his companion on this occasion, "there are no less than forty apartments for guests in that house, and all of them probably occupied at this time, except what are reserved for us." "Then," said the Dean mournfully, "I have lost a fortnight of my life," the time which he had promised to spend at Thomastown, adding suddenly, "but there is no remedy, I must submit!"

Mr. Mathews received him at the door with uncommon marks of respect; and then conducting him to his apartment, after some compliments, made his usual speech, acquainting him with the customs of the house, and retired, leaving him in possession of his castle. Soon after the cook appeared with his bill of fare, to receive his directions about supper, and the butler, at the same time, with a list of wines and other liquors. "And is all this really so," said Swift, "and may

I command here as in my own house?" The gentleman before mentioned assured him that he might, and that nothing could be more agreeable to the owner of that mansion, than that all under his roof should live conformably to their own inclinations, without the least restraint.

"Well, then," said Swift, "I invite you and Dr. Sheridan to be my guests while I stay, for I think I shall hardly be tempted to mix with the mob below." Three days were passed in riding through the demesne without ever seeing Mr. Mathews or any of his guests. On the fourth, Swift entered the room where the company were assembled before dinner, and addressed Mr. Mathews in one of the finest speeches he ever made, expatiating on all the beauties of his improvements with the skill of an artist, and the taste of a connoisseur; and concluded by saying, "now, ladies and gentlemen, I am come to live among you, and it shall be no fault of mine if we do not pass our time agreeably." So much was he fascinated with the place, and finding himself so happy, that instead of the fortnight which he had originally intended, he passed four months there, to his own satisfaction and to that of all who visited the place during that time.

Of the varieties of drink made use of in ancient times, there is no distinct detail. All writers affirm that Ireland abounded in milk and honey; but that a drink was made resembling the Tartarian koumiss, as conjectured by Ledwich, is improbable. By the chronicles of Eri it appears, that the early inhabitants lived chiefly on milk, and were the same as the *galactophagi*, or milk-eaters, mentioned by Homer; the corresponding compound word in the language of Eri, is *geal-laedfoghac*, a liver on unskimmed milk, or with more propriety *curd-eater*, which, without much stretch of fancy, might lead us to conjecture that cheese must have been in early use in this country. The food of the ancient Irish was, according to Strabo, milk, butter, and herbs; hence he called them herb-eaters.*

That mead, or honey-wine, called in Irish *miodh*, *meadh*, and *milfion* (in Icelandic, *miæd*, in Saxon, *medo*, *medu*, in German, *mede*, *meth*, in Dutch, *meethe*, in Welsh, *meddeglyn*, *metheglyn*,) must have been plentiful in Ireland, is an incontestable fact, since it was the common drink of the people in the days of Druidism, and mead is mentioned with praise in the life of Berach, who flourished in the seventh century, as noticed in the annals of Ulster.† For these reasons, the Brehon laws wisely provided for the propagation and preservation of bees, since they were deemed among the most valuable part of the property of the early Irish. "Whover plunders or

* Strabo, Geog. B. iv. † Harris's Ware, p. 183.

steals bees out of a garden or fort," says the Brehon code, "is subject to a like penalty as if he steals them out of a habitation, for these are deemed of equal penalty by law."

Bees in an enclosure or fort, and in a garden, are of the same account (as to property, penalty, &c.) as the wealth or substance of an habitation.* Camden tells us that, from the earliest period, bees were not only in hives, but in trunks of trees, and in the holes of the earth, hence there was such a profusion of honey, that it became an article of exportation.

The most ancient songs and poetry, which the country affords, are replete with praises of mead; and in a poem by Alfred, king of the Northumbrian Saxons, A.D. 685, he notices honey and the drinks used at the banquets.

Pliny and Virgil praise the liquors made by the mixture of honey, raspberries, and white currants; hence it is evident, that mead and metheglin were favourite beverages in that age. Mead was at that time prepared in the following manner:—A quantity of honey, collected fresh from the combs, was blended with water till it came to a proper consistency. It was then boiled for better than an hour, suffered to cool, and left to ferment in a close vessel.

Modern times introduced the addition of spices of various descriptions, according to the taste or fancy of the mannfacturer. A small quantity of barm was added to promote fermentation and increase the levity of the fluid.

Barm was a Celtic discovery arising from the knowledge of brewing. It was found that the froth or spume of their curmi, (denominated *burm* by the ancient Welsh) mixed with flour and water, in the composition of bread, rendered it lighter and pleasanter than leaven, eggs, milk, honey, or the lees of wine, as used by other nations; hence the application of its use in the fermentation and clarification of vinous liquors.

The modern mode of making *mead* is as follows:—To a hogshead of water add eight gallons of honey; blend them well together, and boil them an hour in a copper; skim the mixture and draw it off into a receiver, and leave it till it becomes lukewarm; then cask it with some yeast, and when fermentation is completed, bung the casks closely. In the process, some introduce whites of eggs, mace, ginger, cloves, cinnamon, rosemary, lavender, sweet-brier, lemon-peel, orange-peel, with other spices and aromatics, to heighten the

* Walker's Historical Essay, 2nd. Ed. p. 164. Anthologia Hibernica, vol. ii. p. 132. note.

flavour and render it more palatable, and make it a useful stomachic.

At the present day, great quantities of mead are manufactured in various parts of Ireland, particularly in the counties of Cork, Limerick, Waterford, and Tipperary; and cider of a superior quality is equally abundant in those counties, and sold at a very reasonable rate. The introduction of cider into Ireland was in the reign of Elizabeth; and it was first made at Affane, in the county of Waterford,* a drink which Phillips, in his admirable poem on this liquor, says,

"——————— far surmounts
Gallic or Latin grapes."

A wooden flaggon, called a *meather* or *mether*, implying acid drink, is still to be found in this country, and is considered a relic of high antiquity and veneration. It is formed out of a solid piece of wood having four sides, with two handles opposite to each other, so that it may be raised to the lips with greater ease. Tradition venerates the very name of *mether* as a drinking utensil, since it makes us familiar with the associations of our early ancestors. Although the *mether* was used in former times as a drinking vessel, yet it is thought that the *corna*, or horn, was more ancient. This was at first merely the horn of a cow or bullock; but in process of time, it was made of brass. The crooked cornet of Pliny, and our corna are, perhaps, one and the same instrument.

Among the drinking vessels used by the ancient Irish, was the *Concha Marina* or *blaosg*, corresponding to the *Buccina* or *shell of the Murex*, used by the Romans. Formerly, both in Ireland and Scotland, drink was served at feasts in this utensil; hence the expressions "feast of shells," and "hall of shells," may be accounted for as occurring in Irish and Erse poetry.

The *corna*, in its natural form was polished, and ornamented according to the fancy of the times. The same description of drinking-horns was common in England and Denmark. In the latter country, they usually drank out of nothing but the horns of an ox; and, in the museum at Copenhagen, there are preserved two of those horns made of gold, found among others of a like kind at different times in Jutland. These horns are ornamented with hieroglyphics; one of them represents a human figure with a dog's head, a device common in Egypt, it is supposed to represent Anubis or Hermes of Hades. From this it may be conjectured that these horns are of Celtic origin, and all derived from the same stock,

* Walker's Hist. Essay on Gardening, 8vo. p 166. Anthologica Hibernica, vol. i. p. 194.

that of the Titan Celts, who inhabited the coasts of the Mediterranean, and existed in Greece, in Gaul, and in the Atlantic Isles, before any of the Gothic and Grecian colonies had made their way into Europe. These instruments were used not only at the convivial board, but were the usual vehicles for carrying a supply of drink as well in the field of battle as in that of the chase. To this practice Chaucer alludes in the following distich:

> " Janus sits by the fire with double berde
> " And drinketh of his bugle-horn the wine."

To these horns were neatly appended, stoppers or lids, to secure the liquor. Grose records, that in the will of Prince Æthelstan, he is found bequeathing his drinking-horn, along with his military accoutrements; and Pennant describes one of these ox-horn cups which he saw at Dunvegan Castle in Scotland,* as tipped with silver, of a spiral form, and used at festivals, when each guest was obliged to drink off its contents at one draught.

The northern nations held this species of drinking-vessel in high esteem, and employed the capacious horn of the great Aurochs for that purpose. Those cups graced the halls of kings; and out of them the ancient heroes quenched their thirst. Even in Ireland, at the present day, horns are used by the gentry in some places for the purpose of distributing ale or beer among the domestics, labourers, or attendants; and hence the expression of a horn of ale, beer, or whiskey, is familiar to almost every Irish ear. Horns, therefore, being the early drinking vessels of the descendants of both Greeks and Goths, account for representing Bacchus with bulls' horns; and why he has sometimes been called Taurus.

From the practice of drinking out of horns, filled to overflowing, may have originated the *cornu-copiæ*, or horn of plenty, so familiar in heathen mythology, and from which was supposed to issue a superabundance of all the riches of art and nature. These drinking-horns, being the first in use, have, no doubt, been continued in consequence of their antiquity. The scriptures mention them in different places.†

Horns were fixed on the ancient altars not only for use, but for ornament; the sacred oil of the tabernacle was kept in a horn; the sacrifices were frequently bound to the altar by cords from them; and some altars were constructed entirely of these materials, so that they were held as sacred from the most remote times.‡ Galen re-

* Pennant's Tour in Scotland, Voyage to the Hebrides, vol. ii. p. 194.

† 1st Samuel xvi. Isai. xxxii. 24. ‡ Exodus ii. 27.

reports, that at Rome, oil, wine, honey, and vinegar, were measured in horn vessels; Horace speaks of them as being common utensils; Pliny describes the use of horn-drinking cups as familiar to all the nations of the north; Cæsar mentions that in the Herciuian forest, large cups made of the horns of the Urus were in general use.

Xenophon says the same of many of the nations of Europe and Asia; and the ancient poets, Æschylus, Sophocles, and Pindar, always represent their heroes drinking out of horns; and, in some parts of Africa, these are the only vessels used for keeping liquor. Travellers, in ancient times, always carried a horn for the purpose of taking up water from a spring to quench their thirst. Such a horn had Samuel when commanded to fill it with oil and proceed to Bethlehem to consecrate a king over Israel.

The drinking-vessels of the Greeks, Britons, and the Celtic nations, were of various sizes and materials. The ancient Britons had cups of silver, wood, and earth, with horns of oxen and other animals. In the Itinerary of Archbishop Baldwin, through Wales in 1158, mention is made of Hirlas, or the drinking horn of Owen, who was Prince of South Wales in 978. It is described as a vessel of curious workmanship, " with an enriched lid of gold," and was the subject of a poem composed by one of the Cambrian Bards, translated by Sir Richard Colt Hoare, from the original of Giraldus Cambrensis. The horn of Ulphus, preserved in the Cathedral of York, which is made of ivory, 27 inches in height, and 5 inches in breadth at the top, has a chain fastened to it by which it may be hung up; and was presented to that church by a northern prince about the beginning of the eleventh century. In the museum of the College of Dublin, is a similar ivory horn of sixteen sides, about 16 inches high, gilt, and mounted with brass. Round the mouth-piece is this inscription in Gothic characters—" Tiguranius, (or Tighernan,) O'Lavan made me for the love of God." This horn, which was certainly made for a drinking-cup, has been called the charter-horn; but, for what reason cannot be determined, unless from the practice which is said to have been observed in the conveyance of estates or other property by the donor giving a drinking-horn, or cup, in ratification of the charter. The conformity between the ancient horns of the north and those of the east, shews them to have had one common origin and object.

The Caledonians generally employed shells, which are still in use among the Highlanders, and from the horn of the Urus drinking-cups were made and ornamented with silver. Neale, in his Travels, saw, at Para, the horn of a rhinoceros admirably sculptured in low relief, and which was said to have been found among the sands of Egypt.

Its form was scaphoid, resembling that of the double-headed pateræ, in use among the ancients for pouring libations on the altars of the gods, some of which, of pure gold, have been dug up lately in the bogs of Ireland.

The intemperate Thracians were accustomed to empty them in their drinking matches at a single draught, a practice which the Highland chieftains of the present day still observe. It was probably owing to such an exploit, that Alexander the Great met with his sudden death, as he was in the very act of employing a drinking-horn called the cup of Hercules, when he fell down and expired. The horns of the rhinoceros were particularly selected by the ancients for their pateræ, from an opinion that they possessed an occult, magical quality, so that no poisonous liquid could be poured into them without being shewn by a cold dew exuding through the pores and appearing on the surface. It was this superstitious notion that induced Mithridates never to drink from any other vessel than the horn of a rhinoceros, as he was in constant dread of being poisoned. The Chinese of the present day use large cups of this description on particular occasions of ceremony, and at the close of their entertainments. Porcelain cups, it is thought, were first introduced at Rome by Pompey, when he returned from the shores of the Caspian sea, and such was at that time their value that one which held three *sextari*, sold for twenty talents (£3860), and Nero gave three hundred talents (£57,900) for a single vessel.

Augustus, upon the conquest of Egypt, selected out of all the spoils of Alexandria, a single *murrhine* cup for his own use. This *murrhine* is believed to have been porcelain, and it is said that Cleopatra drank her narcotic wine out of china; and such was the fancy for those costly cups, that Nero, according to Pliny, paid 6000 sestertia, (nearly £50,000) for two glass cups with handles.*

Antiquarians are divided respecting the substance called *murrhine*, and whether cups made of it were ever introduced into Ireland, or any of the British Isles, is uncertain; but they were held in high estimation by the ancients. Dr. Hagar asserts, that they were formed of a Chinese stone called *yu*, diversified in colour, and bearing a polish like agate. This *yu*, which is a kind of pebble, is distinguished by the names of the *water-yu*, and the land, or *earth-yu*, one being found in rivers, and the other in mountains.

That the Romans might have procured these from the East is highly probable, since we are assured that three centuries before the

* Pliney, B. xxxvi. 26 vide Dr. Vincent's Appendix to the Periplus of Nearchus, p. 44.

Christian era, the cups used at the tables of the Chinese princes were of gold, silver, and *yu stone*, and in the times of Augustus and Nero, a *yu-cup* was a most acceptable offering to a Chinese sovereign.

In a passage of Martial, allusion is made to the Romans using murrhine-goblets in drinking warm wine, which Dr. Hagar quotes as an additional proof that these vessels were procured from China, since in that empire all liquors are drunk warm. The extravagant price for *yu* need not be wondered at, being so very rare ; and even at the present day, *yu stone* is considered by the Chinese more valuable than gold, since nine or ten years are incessantly employed in the manufacture of a single piece.*

Those stones are from two to twelve inches in diameter ; some as white as snow ; some of the most beautiful emerald green ; others yellow, vermilion, and jet black. The rarest and most esteemed varieties of this stone are the white speckled with red ; and the green veined with gold. Many of the wealthy Romans used drinking-vessels, the inside of which were cut and polished, forming mirrors ; so that the person drinking might see his own image multiplied. A goblet of this description was, among other valuable gifts, presented by Valerian to the Emperor Probus.

Vallancey states, that, by the ancient Brehon laws, a tax or tribute to the chief was placed on each load of *cromer indi*, or cocoa-nuts, the shells of which were used as drinking-cups by the Irish, which is a corroboration of the early intercourse of this people with the Eastern nations. About the beginning of the 17th century, the French introduced cups made of ice for the double purpose of drinking and keeping the wine cool.

The Pretender, during his wanderings amongst the fastnesses of Scotland, was in the habit of drinking out of a cup, with a glass bottom, through which he could observe and guard against the motions of an enemy. Such cups were common in the feudal times.

A curious antique cup, holding about a quart, was presented with rose-water to the Queen after dinner, at the civic entertainment given to her on the 9th November, 1837. This cup belonged to James I., and bore the following quaint inscription on the frieze, or fillet that surrounded the upper part :

> " To faithful soules,
> Christ giveth drink right goode."

The salver, on which it was served, had once graced the board of George I., whose arms were engraved thereon.

Amongst the cups used in ancient times, there were none more

* Hagar on the Numismatical Hist. of the Chinese, vide Valpy's Classical Jour.

extraordinary than those made of human sculls; some using those of their enemies; others, those of their friends. Herodotus informs us, that they were shaped into cups by cutting them off below the eyebrows, sometimes neatly varnished, and the Scythians, if poor, covered them with leather, but if rich, in addition to that, they decorated them with gold. Rubruquis says, that the Thibetians made handsome drinking-cups of the sculls of their parents, that they might the better recollect them in the times of their festivity. It is told of the Persian monarch Shah-Abas the Great, that having slain an Usbeck prince, he made a drinking-cup of his scull set in gold, which was used on solemn occasions by his successors. An Usbeck ambassador, being at the court of Ispahan, was presented by the emperor with this cup full of wine, and was asked if he knew of what it was composed. Being told that it was the head of his king, the ambassador discreetly remarked:—"My king was happy in dying by the hand of so great a monarch; but to me he appears much more glorious at present, since I see his memory preserved by so mighty a king as your majesty!" It is related of Ghenghis Khan, that he was in the habit of using a silver-enchased scull, as a drinking-cup not only in ordinary but on festive occasions.

Alboin, king of Lombardy, converted the scull of his father-in-law Gunimond, whom he had slain in battle, into a drinking-cup, and presented it filled with wine to his wife Rosamond, as a trophy of his victory. We are informed that Gerald Fitzgerald, Earl of Kildare, drank out of a scull as a vessel at that time in common use. About thirty years since, Mr. M'Carthy, a gentleman of the county of Cork, who, in the language of the Beauford Manuscript, was "Titular king of Munster," being the descendant of M'Carthy More, prince of that province, had in his possession a cup said to be made from the scull of an ancestor of Brian Boiromhe, whom the M'Carthys had slain in battle. It was highly polished and had a lid of silver. It was said to be the custom of the Irish to retain such cups, and pledge their friends from these favourite vessels; many of which have been found buried in bogs, and several of them are still in the possession of old families.

It is, however, strongly maintained, that the practice of drinking out of human sculls was not an usage common in Ireland. Vallancey quotes a French writer to show that the ancient Gauls made drinking-cups of their enemies slain in battle, and asks—"Do not such authors know, that their ancestors imported this barbarous custom from the East?" The polished Arabians and Persians, he adds, did the same. Their poems, which we admire so much for their soft imagery, were delivered at their evening conversations, when the *goblet scull* of their

enemy, filled with delicious wine, was passing in its festive round, while the minstrel sung as follows :—

" Boy, bring the wine, for the season of roses is come—like nightingales, let us sink at once into nests of roses ; in the recess of the garden, quaff off the goblet of wine. * * *

The pleasantest beverage is the blood of our enemies.
The most salutary shade is that of spears.
The sword and the dagger are fragrant flowers.
Our drink is the blood of our enemies ;
And our cups are their sculls."

Vallancey, in his specimen of an Irish Dictionary, observes, that the term *bollog*, signifies a large shell of the murex species, a drinking-cup of horn, and also a scull from its hemispherical or round figure : hence he infers, that the supposition of the ancient Irish drinking out of the sculls of their enemies was ridiculous. The term scull, it is affirmed, was usually given by the Goths to their drinking-vessels, and Dr. Jamieson has ingeniously argued, that the same appellation was given to drinking-cups in England and Scotland at a very remote period ; so the idea of drinking out of these sculls in these countries, does not imply barbarism, but a general practice under that term. Notwithstanding the plausibility of these arguments, it is more than probable, that the ancient Irish indulged in libations out of the sculls of their enemies, since so many specimens of these drinking vessels have been found to exist in the country.

The large scull which was converted into a drinking-cup by Lord Byron, as well as the appropriate verses of his Lordship and Mr. Thos. Moore on the occasion, may be in the recollection of the reader.

The following is a representation of the cups common in Ireland, at an early period.

That the vine ever flourished in Ireland as a plant of general culture, is questionable; yet it is asserted by Ledwich and others, that the vineyards were once common in the country; and an old canon, to the following effect, is cited in proof of the assertion:— "If fowl destroy a crop, a vineyard, or garden, enclosed with a hedge of five feet high, the owner shall make a recompense;" from which it has been inferred, that the culture of the grape was once practised here on no ordinary scale. The venerable Bede, who flourished about the end of the seventh century, says, that "Ireland is pleasantly situated, that it abounds with honey, and is not destitute of vines,"* but this should not lead us to conclude that Ireland was a wine country. Certainly we have in the national records compound terms for every thing relative to the grape, such as *fion-amhuin*, a vineyard, *fion-dios*, a wine-press, *fion-chaor*, a grape, *finavain*, a vineyard, &c. Besides, Colonel Vallancey speaks of an Irish almanack of the fourteenth century, in his possession, in which mention is made of the time of gathering the grapes, and drinking must or new wine. In the annals under A.M. 3050, Fiachda II. was surnamed *Fionsgothach, (the flower-king)* from *fion*, wine, and *sgoth*, a flower, wine made from flowers being then much in use; but from what description is unknown. All these matters do not warrant the assumption or belief that the vine ever formed an article of general cultivation in this country. Its plantation could only have been at best an object of partial attention, either in gardens or grounds attached to abbeys and monasteries, and even these were confined to the south of the kingdom. From what has been already advanced respecting the vine in other countries, it must be evident that Ireland could not be a land for its propagation encircled, as it is, by an immense ocean, subject to great moisture, and beyond the range of that zone, to which the growth of this fruit is naturally restricted.

Wine, however, was early in use in Ireland, as it is mentioned in the earliest annals and poems. Adamnan notices it, (B. 2. c. i.) while the annals of Tigernach, A.D. 534, record the circumstance of an Irish monarch being drowned in this liquor after the manner of Prince George, Duke of Clarence, brother to Edward IV. who chose to be drowned in a butt of Malmsey.

It is remarkable, that in a country where the arts were manifestly carried to such perfection, that the study of alchymy, (so enthusiastically pursued by the rest of mankind in other parts of the world,) does not appear to have formed a branch of speculative knowledge in

* Bede, Eccles. Hist. B. i. c. 1.

Ireland; but, although our annals are silent on this subject, it does not follow but such a study may have been pursued; and that it was, seems highly probable, since it is certain that the study of medicine was not neglected by our ancestors; for we are informed, that in the reign of Cormac Cas, there was a famous medical college in Munster, and a poem is still extant in celebration of the great abilities of Finighin, a chief professor. On the other hand, were it certain that the Irish did not pursue a search so vain and futile as that of the philosopher's stone, it would argue in favour of the solidity of their judgment, and, from what does appear, that their attention was directed to considerations of a higher nature—those of regulating and preserving the purity of their history, laws, and usages.

When Partholanus, a Grecian colonist, came to Ireland, (A. M 1798,) it is said, that he brought with him ploughmen and brewers. If such be the fact, the knowledge of malting among the Irish must have been coeval with the first settlers.

That agriculture was, at an early age, carried to considerable extent in Ireland, we have every reason to believe. O'Halloran and O'Connor assert, that the first employment of the Milesian colony, after their arrival from Spain, consisted in clearing a portion of the country of the woods and forests, with which it was covered; and that history records, with particular respect, those monarchs who gave the greatest encouragement to the cultivation of the soil. Though there is an omission in the fragments of those times, the hand of industry has supplied us with sufficient evidence to prove, that this country was more populous than at present, since streets and other remains of towns were sometime since visible on the tops of mountains; and the marks of the plough with ridges, are still to be found at great elevations, having under a bog of five or six feet in depth, a soil fit for all the purposes of vegetation; and hence the island was preferred by foreigners to Great Britain, on account of its fecundity. This is not to be wondered at, when it is certain, from tradition and living testimony, that bogs have been known to grow, to move, and to settle on tracts of land formerly well cultivated; and it is a singular circumstance, that three distinct growths of trees have been imbedded in three distinct strata of bog. Harris and others state, that in 1601, when Tyrone and O'Donnell marched to the relief of Kinsale through Connaught, a considerable portion of ploughed land over which they then passed with their army, is now a bog; and that the mansion-house of a nobleman is to be seen in the midst of it. The population of the country could not be inconsiderable, since in Munster alone, during the reign of Brian Boiromhe, 30,000 fighting men could be

brought into the field, composed of 25,000 infantry and 5,000 cavalry; with a fleet of 300 sail fully manned, of which it is said Callachan, one of the Munster princes, furnished 120 ships. For the subsistence of so great a population, the cultivation of grain must have been considerable—the irrigation of land was then practised—and wheat, or *cruitneach*, as it is termed in Irish, was abundant; which grain, some say, was introduced by the *Cruithnii*, a race of Scandinavian Picts. But it is more probable, that it was introduced many centuries before through an intercourse with foreign nations; and that barley was also cultivated and ale brewed from it previous to our first acquaintance with the Danes in the nineth century, is indisputable. *Orna*, according to Vallancey, is the Irish term for barley, and Strahlenberg says, that *Arba Buda* is the Calmuck term for wheat, corresponding nearly with the Irish epithet *Arbha Budh*, signifying yellow grain. From these circumstances, it is manifest that ale or beer from grain was early brewed in this island, and the silence of Bede and Cambrensis on the subject is no proof to the contrary, though Ledwich inconsiderately admits that it is.* We learn from the writings of Cormac M'Cullenan, Archbishop of Cashel and king of Munster, who flourished in the ninth century, that the making of malt and brewing of ale were then familiar in this country.

Cuirm was a common term applied to beer and ale; and *brocat* or *sainlinn*, (in Welsh *bracat*), was a name for a drink brewed from malt, *brac* or *breach* signifying malt; hence the word meant a good or agreeable ale from malt. Cuirm, in its general acceptation, implied festive drinking, with hospitable welcome and cordiality; and it yet justifies the common saying—"I will hold no *cuirm* with an evil companion or a dangerous neighbour!"

In the fifteenth chapter of Jonas's life of St. Columbanus, (who wrote between 589 and 640) there is the following curious passage illustrative of this subject:—"When the hour of refreshment approached, the minister endeavoured to serve about the *ale (cerevisiam)* which is bruised from the juice of wheat and barley, and which, above all the nations of the earth, except the Scordiscœ and Dardans who inhabit the borders of the ocean, those of Gaul, Britain, Ireland, and Germany, and others who are not unlike them in manners, use; he carried to the cellar a vessel which they called a *typrus*, and placed it before the vessel in which the ale was deposited, when having touched the *spigot*, he suffered it to run into the *typrus*."†

Grain, in those days, was separated from the husk, not by threshing,

* Antiquities, 2nd Ed. 4to. p. 371. † Messingham, Flor. p. 226.

but by burning, 'till the ear was fully disengaged from the straw and chaff. This was, generally, the work of the women.

The same method was practised in the Highlands of Scotland, and a similar mode of separation was observed by Mr. Turner, when he passed through Bootan to Thibet.*

Parched corn still forms a portion of the food of the Arabs resident in Palestine, while our Milesian ancestors were so expert in the preparation of grain in this way, that they could produce bread in the course of one hour after reaping.

The introduction of water-mills, to render grain more subservient to domestic purposes, took place about the year 500, and is attributed to the monks of that period—a proof that agriculture was then more extensive than some prejudicial writers are willing to acknowledge: for although *querns* continued to be used for many ages afterwards, that is no evidence that grain was not abundant.

Tigernach mentions two warriors who were killed in a mill in Leinster in 1651; and Cormac's Glossary derives the word *muiland* (a mill), from *mol*, a shaft, and *ond*, a stone, the principal parts of the machinery. Even in modern times others deduce the term *mill* from *mol*, to grind, and *lind*, a pond, because driven by water. There is little doubt that water-mills were older than Christianity in Ireland, a country in which grain was cultivated 1500 years previous to that era. Many of the townlands, at the present day, retain the name of *Mullein*, compounded or associated with the names of the owners, shewing the places or sites of mills.

Querns may be considered as one of the earliest inventions for grinding grain, and are supposed to be the same kind of machine as that referred to in different books of the Old Testament,† and still used in the East and among the Sclavonic tribes of Europe. This was, and is, the work of the women, especially of the female slaves. In the course of time, shafts were fitted to them, so that cattle might supply the place of manual labour.

Water-mills for the grinding of grain are said to have been the invention of Mithridates, and were first erected in Rome on the Tiber, in the time of Augustus, and the event is celebrated by Antipater in a Greek epigram, so that their introduction into this country was not remote from their invention, and not until they were considered effective by the improvements they had undergone. It was a consi-

* Turner's Embassy 4to. p. 185.

† Exodus xi. 5. Numbers xi. 8. Judges, ix. 53. Matthew, xxiv. 41. *Quern*, Anglo-Saxon *cweorn* and *cwyrn*, signifies a *mill*.

derable time after the invention of water-mills, that wind-mills were introduced. Dr. Clarke observed, that in Cyprus, the mode of grinding grain was the same as that anciently practised in Scotland, Lapland, Ireland, and all parts of Palestine, as well as throughout the Levant, which was uniformly by querns or hand-mills. This mode of grinding grain was commonly managed by women. The process, as observed by him at Nazareth, was thus effected:—Two women seated opposite each other held between them two round flat stones; in the centre of the upper one was a cavity for pouring in the corn, and by the side of this an upright wooden handle for the purpose of moving the stone. One of the women with her right hand pushed this handle to the female opposite, who again sent it to her companion, and thus a rotatory and rapid motion was given to the upper stone, the left hand being constantly employed pouring in a fresh supply of grain, while the flour and bran fell from the sides of the machine; thus illustrating the observations of our Saviour, alluding to this custom in his prediction concerning the destruction of Jerusalem:—

"Two women shall be grinding at the mill, the one shall be taken and the other left."* The same practice seems to have been common in the days of Homer, as appears from the following quotation:—

> A woman, next a labourer at the mill
> Hard by, where all the palace mills were wrought,
> Gave him the omen of propitious sounds.
> Twelve maidens, day by day, toil at the mills,
> Meal grinding some, or barley, some of wheat,
> Marrow of man. * * * * *
> Full fifty female menials serv'd the king
> In household offices; the rapid mills
> These burning, pulverize the mellow'd grain.†

The description given by Dr. Johnson of the handmills that he saw used in the Hebrides, being similar to those already noticed, and to the querns formerly used in Ireland, is worthy of recital.‡

These mills consisted of two stones about a foot and a half in diameter, the lower a little convex to which the concavity of the upper was fitted; in the middle of the upper stone was a round ball, and on one side a long handle; the grinder shed the corn gradually into the hole with one hand and worked the handle round with the other; the corn slid down the convexity of the lower stone, and by the motion of the upper it was ground in its passage.

* Matthew, XXIV. 41. † Cowper's Odyssey, Lib. 20–105, and Lib. 7–10.

‡ Journey to the Western Islands

Where expedition was necessary, two women were commonly employed in the operation, and it is an extraordinary coincidence, that this mode of grinding grain in Ireland and Scotland should exactly correspond with the method used in Asia from the most remote period, a striking and unquestionable proof that our arts had their origin in the East; and it is, therefore, not singular that our antiquaries should have traced our ancestry to that quarter.

Even in Chili, amongst the Indians, maize is ground by a species of quern formed of two stones, one moveable within the other which is hollow. This is worked by a woman, who, with her right hand, keeps the stone in motion, while, with her left, she supplies the grain as the flour falls into a receptacle for the purpose.

About the time of the introduction of water-mills, ale was in common use and home-made; but the wine in general requisition was imported from Poictou in France, and of which Cambrensis speaks as having met with in great plenty.

Camden relates, that the ancient and peculiar drink of the Irish, as well as of the Britons, was ale. This is confirmed by Dioscorides, who flourished under Nero. That writer, speaking of the Britons and Irish, whom he called Heberi, says, that they used a liquor called *curmi*, made from barley,* a name, according to Pliny, given to the same description of drink in common use amongst the Egyptians and other nations, as noticed in a former part of this publication. Camden must, therefore, be in error when he remarks, that curmi is corruptly written for the old British word *cwrw* or *kwrw*, which, he says, signifies *ale*, a name taken from those Danes who called it *oela*, not as Resilius derives it from *Alica*.

It is the same liquor which Julian the Apostate, who died in 363, in one of his epigrams, denominated πυρογηνη και Βρομον ϑ Βρομιον, curmi made of wheat and oats, not the liquor of Bacchus, or in other words, *the offspring of corn, a liquor like wine without wine.* This drink, the same perhaps as the *lean* or *leuan* of the Scotch, famous in the rhymes of the bards, although considered wholesome, is ridiculed by H. d'Abrinces, a Norman, poet to Henry III., in the following couplets:—

> Sure 'tis some monster of the Stygian pool,
> They here call ale, the draughts how thick and foul
> First taken down are passed so wond'rous thin,
> Plenty of dregs must needs remain within.

* Lib. XI. c. 110.

But the learned Frenchman, Adrian Turnebus, in his treatise on wine, doubts not but those who drink this liquor, if they avoid excess, will be longer lived than those who drink wine; whence, continues Camden, it happens that many of our ale-drinkers live to the age of one hundred years.* But the name of the liquor is not of such importance as that of substantiating the fact, that ale or beer was known in Ireland from the most remote antiquity. According to Ware, the Irish had no peculiar name to distinguish this drink, except the word *leaun*, which signifies liquor in general, and which was understood to apply equally to ale or beer. Whether the ingredients were infused into beer, in ancient times, to give it an antiseptic quality, writers have not been sufficiently explicit; but the practice of infusing bitter herbs into vinous, as well as other sorts of drink, is, we have seen, very ancient.

The *poculum absinthiatum* was, in early ages, accounted a wholesome beverage, and worm-wood was supposed to be an antidote for disorders occasioned by inebriety; while some French chemists affirm that beer made with worm-wood intoxicates more quickly, and that it greatly assists the digestive organs.

The modern Swiss still solaces himself, amidst the Alpine snows, with a spirit distilled from gentian, the bitterness of which, though repugnant to others, is relished by him as a most delightful luxury. The *nepenthe* of Helen, with which she solaced her guests, was one of those mixtures that the Egyptians were in the habit of infusing with their beer; and the practice of brewing heath, which was anciently carried on in Ireland, could not have been any thing else than boiling with malt a quantity of that plant, for the purpose of giving it an antiseptic and better quality.

In some of the Western Islands, heath, as already observed, formed a principal constituent of the beer of the inhabitants; but the accurate knowledge of its use perished with the extirpation of the Picts. Wormius speaks of the drinking of *heather-beer*, as one of the pleasures, which the souls of departed heroes enjoyed in the society of the gods. The Danes, when in possession of this country, are said to have brewed *boir*, or *beer*, from heath; but it is certain that this shrub would yield a very unpalatable drink without the addition of some saccharine matter. As a proof of this, a gentleman in the county of Donegal, tried, some years since, to manufacture beer from heather, but was unsuccessful; hence it may be presumed, that the term *heather-beer* means nothing more than the name, the flower and tops

* Camden's Brit. vol. ii. p. 303.

of the heath being used as a substitute for hops ; since it is well known, that previous to the introduction of the latter plant, broom, wormwood, and other bitter herbs, have been so employed.

When *heather-beer*, therefore, is spoken of, it should be understood as implying the art of making beer, in the same way as we associate the idea of that drink when speaking of hops ; but what kind of grain was employed, together with heath, is, now, merely a matter of conjecture. It is, however, more than probable, that *buck-wheat (polygonum fagopyrum)*, was the chief ingredient, since it is a hardy grain, and most commonly found growing amongst heather ; and from which peculiarity, the Germans termed it *heide-korn* from *heide (heath)* and *korn*, Anglice *corn*. From the early acquaintance of the Danes with the properties of this corn, there is every reason to believe that it was it they employed in the manufacture of their beer—a use to which it is still applied in Denmark, where it is extensively cultivated. Banister, in his Synopsis of Husbandry, says, that this grain has a singularly intoxicating quality, and that he observed swine, which had eaten of it, so inebriated, that they could scarcely move. Of its virtues much has been previously stated, both as regards its value as an article of food, subsistence for bees, and a commodity useful in the distillery.

An English gentleman, in a late interesting paper on the properties of heath, says, that when it is two or three years old, if cut down by a scythe, and dried as much as possible in the shade, it will produce, when infused in a vat or mash-tub, with boiling water mixed with grain, a very considerable quantity of strong and small beer, as well as spirits by distillation.

The tradition, which gives to the Danes the credit of extracting a liquor from heath, also reports that the practice of making it was lost with their expulsion. After being effectually defeated at Clontarf, and obliged to fly to their native country, the only remaining survivers were a father and his two sons, whose lives were promised them as a reward for the secret of making this beer. The father, knowing the attachment that youth have to life, and dreading that if his children survived him, they would discover the secret, which he had resolved should die with him, proposed that if his sons were slain, he, himself, would divulge the secret, alleging that if he did so while they were living, they would destroy him. In accordance with this suggestion, the young men were put to death, at which the father rejoiced, knowing that the secret was then with himself, and, with heroic bravery, exclaimed, "now my purpose is accomplished;—youth cannot be practised on for the love of life, to tell a secret, which pain shall not

extort from me;—let me share the same fate with my sons—I am prepared—I fear not the worst you can inflict—I am ready to die!" The father shared the fate of his sons, according to his desire, and thus, it is said, the knowledge of the art died with him.

A few years since, in sinking for a water-course in a townland of the county of Limerick, a mill, with the machinery, and a portion of brewing utensils, were said to have been discovered, together with some cakes of bread and heather, concealed in the position in which they were left by the Danes.—It was also stated, that a book, or manuscript, containing the receipt for the making of *heather-beer*, had been found at the same time; but that it was clandestinely taken away. If this statement be correct, it is a corroboration of what is here advanced, that the Danes employed other ingredients than heath in the manufacture of their beer, and it would seem that they used bread instead of grain, like the Egyptians and Abyssinians of the present day in the composition of *Bouza*.

In our own days, by an infusion of worm-wood in hot ale, a drink called *purl* is used, by bacchanalians, as a morning draught, after a night's debauch, both in England and Ireland, wormwood being accounted a corrector of inebriety. The ancients mention a wine made from it as a wholesome and agreeable drink. According to some, it was an infusion of the leaves of the plant in a quantity of wine; but others say it was produced directly from the plant by fermentation. The practice, in former times, of fermenting worts by means of yeast or barm for the purpose of making beer, is allowed to have been introduced into Ireland by the Celts, and the yeast was preserved by means of a furze or whin-bush, *(gorze, ulex europeus,)* kept in the chimney from brewing to brewing. This, when dipped in the wort, like rennet in making cheese, caused the liquor to ferment. We are told that during the intercourse between the Irish and the people of Chester, in 1156, ale was mentioned as an article of export into that city, from which it is evident that brewing was familiar in the country at that period. In 1184, the rapacious Philip of Worcester, then governor of Ireland, in one of his excursions, meanly wrested from the clergy of Armagh, a cauldron of copper used for brewing, which was sent to Down, but afterwards restored to its proper owners.

The ancient Irish, at their ordinary entertainments, were served by waiters with drink in cups of wood, horn, brass, or gold, according to the rank or consequence of the party. They usually sat in a circle on rushes or beds of grass, instead of benches or couches. Three-legged wooden tables were placed before them after the manner of the ancient

Gauls; and were covered with victuals, such as bread baked on grid-irons, or under ashes, milk in a variety of forms, flesh and fish boiled and fried. In the Chronicles of Eri, we find that when the assembly of the Olam met, mention is made of their going forth to the high chamber, and of the boards being spread, and of the horns going round to excess, while, at the same time, the words of wisdom and of age were thus expressed :—" Beware of strong drink, my son, it lifteth high, yea, very high; it abaseth low, yea, very low, the spirit of man; it is the fall of reason, the poison of man's life." When festivities were held at night, the place of assembly was illuminated by tapers of immense size as thick as a man's waist, from which issued a brilliant flame, that rendered every object visible at an incredible distance. It was by one of these lights, that O'Donnell was led to the tent of his enemy, Shane O'Neil, the invader of Tyrconnell, in 1557, on which occasion the latter narrowly escaped destruction. These torches were composed of the pith of rushes twisted together, having a small fibre of the skin or bark left on each to prevent cohesion, and were then well saturated with grease or oil prepared for the purpose. Rush-lights of a similar nature, though on a smaller scale, are yet common among the peasantry, in lighting up their cabins, when from poverty or other causes, candles cannot be procured. At many of those repasts, moderation, then as in modern times, often lost its due restraint, for, notwithstanding the admonitions of the wise and experienced, "popular resentments were excited, as liquor inflamed the passions, and contests rarely ended without bloodshed on the spot."* Such occurrences are not to be accounted extraordinary in a country where faction and ambition too often disturbed the peace of society, and proved the bane of liberty and the prosperity of the nation. At an entertainment given at Tara, about the year 222, when Cormac and Feargus, kings of Ulster, were contending for the monarchy, it was contrived by the artful Feargus, in order to render his adversary's pretensions to the throne unavailing, to have the hair and beard of Cormac set on fire, when he had become heated over his cups; it being an inviolable law that no person could sit on the throne, who had any defect either of body or mind. And we find that it was owing to an indulgence in the use of drink, at one of those festivals, that the Danish chieftain, Turgesius, in 852, fell a victim to the just vengeance of Malachy, king of Meath, whose daughter he wished to violate and obtain for a concubine.

Among the reciprocity of presents mutually interchanged between

* O Connor's Dissertations, p. 110.

the chiefs and monarchs, gold and silver drinking-cups formed no inconsiderable portion. An idea of the extent to which this was carried, may be formed from the fact, that, on one occasion, six of the Munster princes were presented, amongst other gifts, with seven cups each, two with eight, and the four others with ten cups of gold, being, no doubt, in proportion to their rank, to the splendour of their tables, and the quantity of drink consumed at their palaces. Such was the abundance of drinking-cups, as well the value set upon them, that we find Cathair Mor bequeathing fifty drinking-cups with broad hoops, and fifty brown marble vases, as a legacy to Fiacha Baiceda ; and we have instances on record of the *Boige*, (a small vessel weighing five ounces of gold, which was used for drinking *Sainlinn*, or ale) having been transmitted from father to son as an heir-loom. At Tara, the great seat of the monarchy, we read of one hundred and fifty cups of massive gold being the common supply to keep up the splendour of the regal table ; and it appears to have been the general practice among the Irish kings to use large cups at their repasts and entertainments. We are told, that Tireldach the monarch, received with other articles as ransom from O'Brien, king of North Munster, (in 1152) a very large cup, called by way of pre-eminence, the cup of Brien Boru.*

It was customary in those times, for the nobility and chieftains to have their *Bacghal*, *Bachlamal*, or cup-bearer, whose office was to hold the cup or *Bachla* at meals and feasts.† The office of cup-bearer (in Irish, *deochbheire*) is so ancient, that it is difficult to ascertain the period of its origin. So remote as the time of Pharaoh, it was a station of consequence at court, inasmuch as it brought the individual in contact with the monarch, and was therefore a place of great trust. Our translators of the Bible have rendered the Hebrew word for cup-bearer, *butler*,‡ which is a corruption of the old English word *boteler*, implying a person having the charge of bottling liquors. Among the Persians and Arabians, the cup-bearer was termed *saky*, and he had peculiar privileges. With the Parthians, according to Athenæus, men used to serve with swords by their sides ; and in the same manner among the princes of Germany. Ambrose, *de Helia et*

* O'Halloran, vol. i. p. 209. † Camden's Brit p. 143, Ed. 1695.

‡ In Hebrew, the cup-bearer was termed מַשְׁקֶה (*Mashke*), from שָׁקָה, *to give drink to ;* in Greek, οἰνοχόος, from οἶνος, *wine*, and χέω, *to pour ;* in Latin, *pocillator*, from *poculum*, a cup, and *pincerna*, from πίνειν, *to drink*, and κιρνᾶν, *to mix*. The chief cup-bearer was called ἀρχοινόχοος, in Hebrew שַׂר, *Shar*. See Genesis, ch. xl.

Jejun. (c. 13) describes their Babylonian belts and girdles, covered with gold buttons, their gold collars, gold scabbards, and shining hair. Under the Roman emperors, their clothes were of cloth of gold, as appears from a passage in Ælius Lampridius. Homer and Xenophon speak of cup-bearers as important personages, who were common in the palaces of all the Oriental monarchs: even the prophet Nehemiah, in some measure, boasts of being cup-bearer to Artaxerxes, king of Persia, this being the most respectable and confidential situation in the whole court.* The importance attached by the ancients to the office of cup-bearer is familiar to every classical reader. The Athenians had their butlers, who inspected the wine and supplied the guests with liquor; and at entertainments, the heralds performed the office of cup-bearers. Thus in the Odyssey (L. i. v. 142.) we read,

> "The heralds and the busy menials there
> Minister'd to them; these their mantling cups
> With water slaked."—

Euripides, when a boy, gave wine to the dancers round the altar of Apollo, as appears from the testimony of Theophrastus and Hieronymus Rhodius. Statues were erected in Alexandria to the cup-bearer of Ptolemy Philadelphus, clad in a tunic and holding a cup.

Mercury, the herald of the gods, is introduced by Alcæus and Sappho, filling the goblets at the celestial banquets. Among the Greeks it was customary for handsome young men to fill the cups; and Hebe, the goddess of youth, and daughter of Juno, served nectar to the gods, while Ganymede, the most beautiful of mortals, was translated to heaven to serve at the table of Jupiter. In sacred feasts among both Greeks and Romans, only freemen were allowed to minister, and wore loose dresses, the better to show their freedom; but for private persons the noblest captives were selected. Thus Horace, (B. i. Ode 29.)

> "What royal boy, with perfumed hair,
> Shall leave his palace halls, thy cup to bear?"

The Greeks and Romans gave immense prices for the handsomest youths that could be procured, to fill the office of cup-bearer, and present the full goblets of wine, which were commonly of splendid workmanship, and decorated with garlands. Thus Homer, (Iliad, B. i.)

> "The youth with wine, the copious goblets crowned,
> And pleas'd, dispense the flowing cups around."

Juvenal speaks of the flower of Asia costing more than the move-

* Nehem. i. 1.; ii. 1.

ables of the Roman kings; and Pliny, (B. 7. c. 12) says, that a dealer named Toranius sold two beautiful boys to Mark Antony, for 200,000 sesterces. Boys, who had reached the years of puberty, served at the tables of the ancient Britons.

Quintus Curtius informs us, that the concubines of the Indian kings served the wine at the banquets, and carried the sovereign to bed when he had drunk to excess. Females were, on some occasions, employed as cup-bearers by the Greeks, and we read of Hecamede preparing a mixed drink, and of the female attendants of Circe performing the same duty. Even the native American chiefs had their cup-bearers to attend at festivals and on solemn occasions. In the ages of chivalry, knights-errant had their cup-bearers, who were generally their squires, and were as proud, dignified, and chivalrous as their masters. In every civilised country, a cup-bearer was equally known and respected. In Ireland, a cup-bearer was, from the earliest times, an indispensable and honorary attendant at the court of every monarch and at every public festivity. Cormac, king of Ireland, speaking of a banquet, says, "The prince should light his lamps, welcome his guests with clapping of hands, and procure comfortable seats; the *cup-bearers* should be respectable and active in the distribution of meat and drink; there should be a moderation of music, short stories, a welcoming countenance, *failte* for the learned, with pleasant conversations."

In serving the wines, it was customary for the cup-bearer to taste them, for the purpose of shewing that they contained nothing poisonous. This custom of tasting wines in the courts of monarchs, or at banquets and public entertainments, is said to have originated with the Persians, as we learn from Xenophon. Amongst the Romans, this custom is thought to have been introduced by Augustus Tiberius, who employed a wine-taster, and succeeding emperors, as well as other eminent persons, followed the example. The tasting of wines, it is evident, had its origin in suspicion arising from the fear of every man in power, who, though he may have justly punished the guilty and rewarded the meritorious, yet ran the risk of drinking the poisonous bowl or meeting the assassin's dagger. The office of wine-taster, lately abolished in this country, must have originated from this custom. At the feasts of the ancient Irish, large vases or coolers stood at hand, filled with various liquors ready for distribution by the cup-bearers. These vessels were of different materials, some of brass, others of mixed metals, and most of them very expensive and highly ornamented, equalled, perhaps, in modern times only by the silver wine-cooler of George IV., which weighed eight thousand ounces, contained thirty-eight gallons, and was capable of holding six men. Next in magnitude and splendour

may be mentioned the beautiful fountain and cistern exhibited by the Marquis of Exeter, at Burghley, near Stamford, on the visit of the Duchess of Kent and her present Majesty, when Princess Victoria, in September, 1835, and which weighed three thousand, five hundred ounces of silver.

The splendour of an Irish court, in ancient times, will be best understood by the description of the hall of Tara, which, in the reign of Cormac, was 900 feet square, and the diameter of the surrounding rath was 7 dice or casts of a dart; it contained 150 apartments, 150 dormitories for guards, with 60 men in each; the height was 27 cubits; there were 150 common drinking-horns, 12 doors, and 1000 guests daily, besides princes, orators, and men of science, engravers of gold and silver, carvers, modellers, and nobles. There were 27 kitchens and nine water-cisterns for washing the hands and feet of the visitants. The banqueting hall consisted of 12 stalls or divisions in each wing, 16 attendants on each side, and two to each table:—100 guests in all.*

On the first day of November, three days before the feast of *Samhuin*, or the moon, in this splendid court sat the monarch with his face to the west, elevated on a throne, in the centre of the hall. On his right was the king of Ulster, not so much elevated. On his left the king of Munster; behind him was the king of Connaught, and before him was the king of Leinster. The nobility, bards, and others had their stations allotted to them according to their rank. At these assemblies, the records of the kingdom were examined, in order to preserve the annals from mistakes or doubtful matters: hence the origin of our Irish Psalters.

We find, that wines were plentiful in Ireland, at an early period, and our annals state, that Brian Boiromhe exacted a tribute from the Danes of Limerick, about the year 970, of 365 tuns of wine, besides the same quantity from the ports of Dublin, Wexford, and Drogheda: among the items of this tribute we find 268 tuns of Spanish wine, shewing the extent of the commerce of Ireland, at that period, even in articles of luxury. A large portion of this wine was consumed at Cean-Corraah, near Killaloe, the residence of the monarch. There one hundred servants were every day at dinner and supper. From the kitchens, there were two long corridors parallel to each other leading to the banqueting hall, along which the servants were stationed, passing from hand to hand the various services of meats, fruits, wines,

* From an old Irish fragment, found in Trinity College, Dublin, as given by Vallancey.

&c. Across the Shannon ran a bridge of wood communicating with the royal wine-cellars, which, to this day, bear the name of Cloch-na-Fhionne, the wine-store, or building. At this palace, the immortal Brian entertained the princes and nobles of the kingdom with an urbanity and a splendour not surpassed in modern times.* The annual consumption was estimated at 2670 beeves, 1370 hogs, 365 pipes of red, and 150 hogsheads of other wines. The monarchs, during the residence of the Danes, were paid certain subsidies from those traders in money, wines, and merchandise, on the first days of May and November, and hence the larger sea-ports, in particular, were bound to pay tribute in proportion to the extent of their commerce and the privileges they enjoyed. This tribute, at one time, consisted in 6,240 bullocks, 6000 cows, 4000 sheep, 5000 hogs, 5140 cloaks of purple, green, and scarlet, besides 420 tons of iron.

From all that has been said, and the free intercourse that subsisted so long between the Irish nation and the continent of Europe, it would be wonderful that any of those arts, which tend either to increase our knowledge, or add to the comforts of life, should have escaped observation or remained uncultivated. It would, therefore, be anomalous among such a people, were some of the more simple arts unknown to them; so far from that, we find that they were scarcely ignorant of any of those inventions or discoveries, which regarded national interests or domestic comforts. Learning, it is generally admitted, shone brilliantly here when most of the other portions of Europe were immersed in ignorance. Such was the proficiency of the nation in literature, that the Anglo-Saxons and Scots acquired from this country the elements of their learning or philosophy. Bede records that schools were open to foreigners, where they were supplied gratuitously with meat, drink, clothes, lodging, and even books. Surely, then, where there was such an extension of knowledge, the mechanical arts could not have been overlooked nor neglected. The remnants of magnificent churches, monasteries, and princely castles, over which the hand of time has spread the foliage of the ivy; the lofty round-towers, that seem to bid defiance to the ravages of time; the sculpture by which many of those buildings are ornamented; and the splendid, antique, and costly works of art found in the bowels of the earth, are indubitable monuments of a polished, industrious, and superior people.

In the luxuries of domestic life, the Irish also excelled, for, as we have seen, their feasts were luxurious, their clothing superb, their

* O'Halloran, vol. iii. p. 339.

drinks excellent, and so varied, that no other nation, in this respect, possessed greater enjoyments. When, however, *aqua vitæ* was first introduced or manufactured in Ireland, is not accurately determined.

Spirituous liquors have been noticed in some of our earliest songs and writings; and the English, shortly after the invasion, in the time of Henry II., found the people indulging in potations of this liquor. History informs us, that the knowledge of *aqua vitæ* was first known in Europe in the reign of that monarch; but it is more than probable that it was known in Ireland before the English were acquainted with it. The strong affinity between the Irish language and the primitive languages of Asia, as stated by Vallancey and other etymologists, and the intercourse the Irish had with that quarter of the world, lead to the supposition that the art of distillation was introduced directly from India; but it is more likely that it was received from Spain or Italy, where it was early known under the epithet of *acqua vite* or *acqua di vite* (water of the vine), the grape being the material from which a spirit was originally extracted in those countries. The monasteries being the repositories of science and the original dispensaries of medicine, it is a natural surmise that the term *acqua vite* was there corrupted into the Latin and universal appellation *aqua vitæ* (water of life), from its salutary and beneficial effects as a medicine; and from the Latin tongue being the general conveyancer of scientific discovery, as well as of familiar correspondence, the term *aqua vitæ* may have crept into common use to signify an indefinite distilled spirit, in contradistinction to *acqua vite*, the mere extract of the grape. The dissolution of the monasteries gave the secret of this invention to the public, and the elixir of the alembic soon attained the summit of popular regard.

Campion relates, that when the new settlers were attacked by any of the diseases common to the country, they used *aqua vitæ* or *usquebaugh*, the ordinary drink of the inhabitants, as the best restorative of health, and chief preventive of contagion. Speaking of a famine which happened in 1316, he says it was caused by the soldiers eating flesh and drinking *aqua vitæ* in Lent. It would seem that *aqua vitæ* was employed in Ireland, at one time, as opium has been amongst the Turks, to inspire heroism; and this is exemplified in the case of a knight, named Savage, that lived in 1350, who, previously to entering the field of battle, ordered to each soldier a mighty draught of *aqua vitæ*. We learn from Ware and Ledwich, that the *aqua vitæ*, or *usquebaugh* of the Irish, was of a less inflammatory nature than that made in England, because the latter is supposed to be of more recent invention. Its virtues, and the directions for making it, both simple

and compound, are recorded in the Red Book of Ossory, a work compiled about 500 years since, and which, likewise, contains a receipt for making another liquor termed *nectar*, composed of a mixture of honey and wine, having ginger, pepper, and cinnamon, other ingredients incorporated. This mixture was called *piment*, from its pungency and spicy nature, and, on account of its delicious quality, it was much celebrated by the early French poets, who considered the perfuming of wine with foreign aromatics, then so dear and difficult of procuring, as the very acme of taste and ingenuity. In Ireland, it was an early practice to imitate foreign liqueurs, which, from the praise of the poets alluded to, must have even excelled those of Italy and France. *Aqua vitæ* was first used in the country as a medicine, considered as a panacea for all disorders, and the physicians recommended it to patients indiscriminately for preserving health, dissipating humours, strengthening the heart, curing colic, dropsy, palsy, quartan fever, stone, and even prolonging existence itself beyond the common limits. Hence it was eagerly sought for, and the taste, thus formed, has been transmitted from generation to generation, with an attachment which time seems rather to strengthen than to diminish.

The Latin epithet, *aqua vitæ*, the Irish term, *usquebaugh*, and the modern word, whiskey, are, in point of fact, synonymous. *Aqua vitæ* signifying the *water of life*, and us*quebaugh*, which should be written *Iskebaghah* or *Isquebeoh*, the former implying *water of life*, and the latter *living water*. As *Isque*, or *Iske*, means water, it must appear evident that the word whiskey is only a slight alteration in the pronunciation of this Irish term. Both O'Brien and Vallancey admit that *ai*, *ay*, or *ey*, are old terms for water, and *Isque*, or *Iske*, implying water, the compound word literally means *water of waters*. The word whiskey, therefore, is of very comprehensive import, and fully expressive of this sense-subduing beverage. *Buil-ceann* was also another appellation by which spirits were distinguished, *buil* signifying madness, and *ceann* the head; terms fully explanatory of its infuriating effects and the temporary derangement which it occasions. *Fear-buille* is the Irish expression for a madman. Antiquarians inform us, that *buil-ceann* was made from a species of black oats, which, if not malted, must have indeed produced spirits of a very inflammatory and fiery description, particularly when newly manufactured; and from its powerful effects it procured the name of strong waters, afterwards abbreviated into X waters, the letter X being anciently used as the symbol of purity or perfection.

Vallancey states, that from time immemorial this letter was considered a sacred character among the Egyptians, Chaldeans, Thibe-

tians, and Indians; and was respected as a high indication of divine excellence. The Egyptians, however, did not exactly represent it by the figure of an X, but as a direct and an inverted X thus : this sacred symbol is frequently to be found on the columns of the colossal temples of that celebrated and wonderful nation. On the great temples of the Dalai-Lama at Puta-La, or the Holy Hill, as well as at Teshoo-Lomboo, are numerous characters of this kind, all bearing reference to the lofty attributes of the divinity of the Thibetians. From the sacred application of this character it has descended to common purposes, yet still bearing affinity to its literal meaning, as in the instance of X waters, &c.

It is curious to observe, that this ancient symbol so common in Oriental climes, is frequently to be found in Ireland on the pillar-stones or Phalli of our pagan ancestors. The less learned antiquary considers those characters which are marked cross-like, to be Christian insignia or pagan monuments; but the researching philosopher will only estimate them in the proper sense as a part of Oriental heathenism. That the letter X was most commonly written so as to represent a cross, long before the era of Christianity, seems remarkably strange, when we are brought by consequences to the full conviction that the Cross of Christ was the true symbol of perfection, of which all previous characters of the kind may be considered as merely typical.

On the statue of Osiris at Rome was engraved the figure of a cross; and in the Temple of Serapis at Alexandria were found on the demolition of that edifice, by the order of Theodosius, crosses cut in stone; these, in the interpretation of the wise men of Egypt, signified *vitam venturam;* which discovery is reported to have occasioned the conversion to Christianity of some of the Gentiles.* The application of the letter X to whiskey, ale, or beer, was, and continues to be, a distinguishing mark of its strength and purity; and lest the single character might not be sufficient to indicate the strength of some of our malt liquors, it has been doubled, as in the instance of double X porter, now so strongly recommended by the faculty, for its refreshing and strengthening qualities. To *usquebaugh* the letter X has never been applied, because this appellation was extended to *aqua vitæ* in its compound state after the admixture of raisins, fennel-seed, and other ingredients, to mitigate its heat, render it more pleasant, less inflammatory, and more refreshing.

The origin of the term *aqua vitæ*, as applied to exhilarating liquors, it is not easy to determine, unless by an admission of the reasoning

* Socr. Hist. Eccles. lib. 5. cap. 17. Sozomon. Hist. Eccles. lib. 7. cap. 15.

already advanced. Water, in the opinion of the ancient philosophers, constituted the basis of all matter; and Moses having written that the "*spirit of God* moved upon the face of the waters," it was inferred that a living or prolific principle was thereby communicated; hence the early Persians considered water the source of all bodies, (*aqua omnia*), and the Koran states, that "God made every living thing of water." May not, therefore, the appellation of *aqua vitæ*, or water of life, have been derived from this prevalent opinion, since it was reckoned to possess so many renovating and revivifying virtues. The distillation of this liquor was partially carried on through the kingdom, and this from malt alone. No restriction appears to have been put either upon its manufacture or use, until the time of Henry VIII. when it was decreed, "that there be but one maker of *aqua vitæ* in every borough-town upon pain of 6s 8d.;" then a heavy penalty, when money was so scarce and property so low in value. At that time the Irish were great proficients in compounding liquors; but their *usquebaugh* was their famous drink, and in great demand. Whatever might have been its original materials or composition, its qualities were estimated in proportion to the spices and other aromatics used to heighten its qualities, as commonly practised at that period. We also find that no ale should be sold above 2d. per gallon upon pain of 8d. *toties quoties*; and that no wheaten malt should go to any Irishman's country upon pain of forfeiture of the same in value. This last restriction arose, no doubt, from an anxiety to limit the use of wheat in the manufacture of ale and ardent spirits, it being an article properly confined to the making of bread; and hence there was no prohibition against sending *bread, ale*, or *aqua vitæ*, beyond the pale. So early as the reign of Edward I, in 1300, the Irish exported to Scotland, wheat, oats, malt, and ale, for the purpose of enabling the monarch to carry on his warlike operations in that kingdom. At the same period, the mayor and community of Drogheda made him a present of 80 tuns of wine, and chartered a vessel belonging to their own port, by which it was conveyed to him at Kirkcudbright. These historical facts prove that malt was plentiful in Ireland; and although it is only from occasional incidents that brewing and distillation can be traced to their origin, or to their introduction into this country, yet sufficient facts have been adduced to prove that both were common at a remote period, and perhaps anterior to a connexion with Great Britain. Dr. Ledwich has stated, contrary to the standing authentic records of the nation, that distillation from malt commenced in 1590; but it no where appears that the Irish then distilled from any description of grain but what had been malted, as the practice

of employing raw grain in distillation is of much later date. Why this antiquarian has fixed on 1590 as the era of distillation in Ireland is somewhat strange, since we find by an act of parliament passed at Drogheda in 1556, that distillation had become so extensive as to cause to be enacted a law against distilling *aqua vitæ*, "a drink," to use the language of the enactment, "nothing profitable to be daily drunken and used, now universally made throughout this realm, especially in the borders of the Irishry, whereby much corn, grain, and other things are consumed, &c."* This law prohibited the making of *aqua vitæ* without a license from the Lord Deputy under the Great Seal, on pain of imprisonment, and a fine of £4. But peers, gentlemen of £10 per annum in lands for life, or inheritance, and freemen of towns corporate, had liberty to make *aqua vitæ*.

Notwithstanding the frequent use of spirits at that period, our wealthy and luxurious countrymen indulged in the use of rich and costly wines. Hollinshed, in his Chronicles, says, that the great Shane O'Neil, who proved so violent an opponent to Elizabeth, usually kept in his cellar at Dundrum, 200 tuns of wine, of which, as well as *usquebaugh*, he drank copiously, and sometimes to such excess, that his attendants were often obliged to bury him in the earth, chin-deep, until the heating effects of the intoxication had abated.†

The fatal effects of attachment to whiskey are well illustrated in the fate of the castle of Maynooth, which, in the early part of Elizabeth's reign, fell into the hands of the Lord Deputy Skeffington, through the treachery of the governor, Christopher Parese, who kept the garrison so intoxicated, that they were unable to make any resistance. Its ruins, which stand in front of the college in that place, yet proclaim its former strength and magnificence. The spoils obtained, while they enriched the conqueror, proved disastrous not only to the betrayer, who lost his head for his perfidy, but also to the noble family by whom he was entrusted.

With respect to the nature or peculiarity of the spirits used in those times, it is now not easy to determine; but *usquebaugh* seems to have been a general name for all compounded spirits, and plain whiskey as we have it at present, was not the common beverage, it being customary to infuse the liquor with some savoury, or tasty ingredients. In the making of *usquebaugh*, saffron formed not, as is said by some, a basis, but a chief ingredient in its composition. In modern times, the application of this term conveys the idea of a cordial, or liqueur, and as such, the drink is now manufactured. It

* Rol. Parl. 3 & 4. Philip & Mary, c. 7. Vesey's stat. vol. i. p. 251.

† Hollinshed, vol. vi. p. 331.

must, therefore, appear evident, whether *usquebaugh* be applied to the ancient or modern spirits, that its value, flavour, and goodness depended on the judgment of the maker, and the prevailing prejudices of the day—hence the materials employed, varied according to the caprice of individuals and the fluctuation of public opinion. Various receipts, therefore, have been given for its composition, among which the following is considered one of the best :—" To make 10 gallons of this cordial, 2oz. of cloves, nutmegs, and cinnamon, must be taken, with 4oz. of anise, caraway, and coriander-seed, divided into equal portions; also half-a-pound of sliced licorice root. The seeds and spices being first bruised and mixed with the licorice, are put into a still with 11 gallons of proof spirits and 2 gallons of water; and as soon as the spirits is found to come over, a small bag containing about 2oz. of saffron, is fastened to the end of the worm, so that the run of the liquor must pass through and carry with it the tincture and essence of the saffron." During the operation, it is usual to press the saffron-bag in order to convey all the essence of this ingredient into the fluid, and when the process is finished, the liquor is sweetened with the best lump sugar.

The French and others, in addition to the articles already enumerated, use essential oil of citron, bergamot, oranges, and lemons, with angelica-seed, vanilla, mace, cubebs, raisins, and dates; but no limitation can be given for making an article designed to gratify every palate.

The predominant and early use of saffron in the manufacture of *usquebaugh* among the Irish, arose from the extensive application and well-known virtues of that plant, in several, useful, domestic purposes. In dyeing yellow, saffron *(crocus sativus,)* was the chief ingredient, as it gave that admired tinge to the flowing shirts and garments, worn by our early ancestors. Its exhilarating, heating, and aromatic qualities were also so familiar that it was employed as a part of the Irish Materia Medica, being found a great stimulant and renovator. On this account it has been called *cor hominis,* the heart of man; and from enlivening the spirits, it gave rise to the saying, when speaking of a person in a cheerful state of mind, *dormivit in sacco croci,* he hath slept in a sack of saffron. The English, according to Lord Bacon, were rendered sprightly by a liberal use of saffron in sweetmeats and broths; and Boerhave calls it a true and genuine rouser of the animal spirits.

Its use in colouring the ancient Irish apparel, was grounded on the opinion and prejudice, that it tended to strengthen the body and limbs—virtues which no other colouring substance was thought to

impart; and here it may be noticed, that the loose and flowing robes of the Irish bespeak an Oriental origin and imitation. The Irish were not the only people that employed saffron on particular occasions in preference to other substances equally valuable. The Poles and Spaniards use it in their sauces and richest delicacies, while its application to the colouring of butter, cheese, creams, and conserves, is too familiar to require further notice.

The mixing of saffron and aromatic spices with spirits is also of Oriental origin, it being the practice of almost every nation to put ingredients into their liquors to gratify the taste by rendering them more palatable. Thus, in modern times, it is the prevailing practice to render spirits more agreeable by diluting them with water, adding lemon and other ingredients to neutralize the pungency or ardour of the spirit, as exemplified in our common drink termed *punch*.

The beverage called *punch*, so popular in this country, and throughout the whole of the British empire, is a compound drink, which is generally believed to have originated in the East, and is said to have been first made by the English at Nemle, near Goa. The Persian *punj*, or the Sanscrit *pancha*, signifying *five*, is most probably the source of its derivation; since it denotes the number of ingredients of which it is composed.

The *pale-puntz* of Surat, as well as the *boule-ponge* met with by Bennin in 1644, (see page 156 of this work,) are merely terms for the liquor known to us as *punch*. The former consisted of arrack, rose-water, juice of citrons, spices, and sugar.

Freyer, in his travels, says, that the word *punch* is purely Indian, and is understood to mean the mixture of five ingredients as a drink. Struys and Mandelslo, both old writers, support the same opinion, and clearly show the liquor to be Oriental. How well the making of punch is understood by our countrymen requires no comment!

The following account of a jovial bowl of this beverage may be amusing:—In the year 1694, a bowl of punch was made at the house of the Right Hon. Edward Russell, Commander-in-chief in the Mediterranean. It was made in a fountain in the centre of a garden surrounded by four walks, each of which was covered over-head with orange and lemon trees, and having a table the whole length of it, spread with a cold collation, confectionary, &c. The following ingredients were mixed in the fountain, viz., four hogsheads of brandy, eight hogsheads of water, 25,000 lemons, 20 gallons of lime-juice, 1,300 weight of fine, white Lisbon sugar, five pounds of grated nutmegs, 300 toasted biscuits, and a pipe of dry Malaga. A large canopy was raised over the fountain to keep off the rain,

and a boy belonging to the fleet, towed round the circle, and filled the cups to the company, of which it was computed more than 6,000 men partook.

The partiality of some individuals for this beverage is well illustrated by the following anecdote, which the Author had from an authentic source:—A gentleman in the south of Ireland, who was fond of fox-hunting and other field-sports, seldom sat down to dinner without a few friends, who were equally social. After returning on one occasion, accompanied by his fellow-sportsmen, and partaking of a good dinner, he and his guests applied themselves to the enjoyment of the bottle. After drinking to a reasonable hour, one of them conceiving he had taken his *quantum*, and having to attend a fair on the following day, retired to his home. But what was his surprise when he called at his friend's house, on his way at six o'clock in the morning, to find the servant coming to the door with a kettle of water. Suspecting its purpose, he exclaimed, "Ah! John, is your master still at the *punch ?* Yes! by H——," replied the other, "this is the *twelfth* kettle, since you left him last night!"

The subjoined lines, translated from the German of Schiller, are taken from the Dublin University Magazine for January, 1835, as conveying some good moral reflections on this subject:—

Four be the elements:
Here we assemble 'em
Each of man's world
Or existence an emblem.

Press from the lemon
The slow-flowing juices—
Bitter is Life
In its lessons and uses!

Bruise the fair sugar lumps—
Nature intended
Her sweet and severe
To be every where blended.

Pour the still water—
Unwarning by sound,
Eternity's Ocean
Is dark'ning around!

Mingle the spirit,
The life of the bowl—
Man is cold mortar,
Unwarmed by a soul.

Drink of the stream
Ere its potency goes—
No bath is refreshing
Except while it glows.

Malt-drink in Ireland, as has been already stated, was of early origin, but its general use was inconsiderable till after the English invasion. A duty of 5s. $3\frac{3}{4}$d. ℔ barrel was imposed on it in 1787, when its consumption became of some magnitude. While it was in operation, this duty varied in proportion to the exigencies of the state and the views of the ministry; but the government, from a wish to encourage the use of malt liquors, and the advancement of agriculture, thought it expedient to repeal the duty altogether; at the same time the duty was raised on malt from $9\frac{1}{4}$d. to 1s. 3d. the bushel, and afterwards gradually increased to 4s. 5d., and was again lowered to

2s. 7d., the present standard duty. It appears from the Parliamentary returns,* that since 1796, the year in which the Irish beer-duty was rescinded, there has been on the whole, a falling off in the consumption of malt, notwithstanding the immense increase in the population, clearly shewing that the abolition of the beer-duty did not answer the intention, and proving that the Irish people preferred spirits.

To what this taste may be attributed might be worthy of inquiry; for it must be admitted, that an Irishman has nothing inherent in his composition to render him more devoted to ardent spirits than the native of any other country. The most plausible reason for this predilection seems to be, that the malt-drink made in Ireland was never of strength, flavour, nor purity, equal to that manufactured in England: hence to the warm and exhilarating spirit a preference was given, rather than to the thin, cold, and unpalatable beer or ale to be met in the shops and taverns of the kingdom. In England, the greatest care was observed by the brewers; in Ireland the trade was in the hands of persons, the majority of whom were men of no capital, subject to no check nor regulation, and studying every thing but the interest of the public, while malt and hops formed but a small portion of the drink imposed on the community. On the other hand, it may be argued that the high duty on these articles induced the brewer to limit their use as much as possible, and to this the inattention of the legislature, in no small degree, contributed. Had the duty on malt been lowered, and a lighter duty been laid on beer with a higher impost on whiskey, it might have had the effect of making Ireland more an ale and beer than a whiskey country, and have prevented many of those misfortunes that have arisen from the unrestrained and prevalent use of ardent spirits, to the disgrace of the national character. It can scarcely be questioned, that were the trade conducted under the control of wholesome laws and the regulations of government, it could not fail to have a salutary effect by producing a pleasant, wholesome beverage, encouraging the fair trader, and punishing the deleterious manufacturer. The quality of the Irish malt-drink has, of late, through the conduct of some spirited individuals, been greatly improved, and is getting into greater repute not only at home but in the sister kingdoms, and even in foreign countries. The quantity of malt used in the breweries in the year ending the 5th July, 1827, was 1,391,456; and in the year ending 5th July, 1828, 1,415,832

* Parliamentary Paper, No. 30. Sept. 1828.

bushels, yielding for the one, at the rate of two bushels of malt for every barrel brewed, 695,728, and for the other 707,916 barrels of the different sorts of malt liquor.* The following is the number of bushels used by the licensed brewers for the years specified:—

YEARS.		BUSHELS.		BUSHELS.
1832,.....	Dublin.....	491,227.....	Ireland.....	1,543,265
1833,.....	do.	539,226.....	do.	1,683,285
1834,.....	do.	790,713	do.	2,055,326
1835,.....	do.	577,021.....	do.	1,829,589
1836,.....	do.	617,035.....	do.	2,032,856

The malt drink exported was, for the year ending 5th January,

1826,..... 9,855	Imperial Barrels.*
1827,.....10,800	
1828,.....11,261	
1829,.....14,499	
1830,.....15,207	

Of these, there were sent to England 11,101, and to Scotland 220 barrels, while in 1829 there were sent to the former 11,754, and to the latter 118 barrels.† The imports of beer during those two years were 747 barrels from England, and 875 from Scotland. In 1832, there were in Ireland 216 breweries, and in 1837, there were 247 breweries, in which the malt consumed in that year, was 2,034,557 bushels.

To establish a brewery in Ireland on a moderate scale would require no great capital. For a concern calculated to turn out 30 barrels per week, two coppers only would be requisite, one to boil fifteen and another to boil six barrels. A mash-keive to answer those coppers should be about 78 inches in diameter and 40 in altitude. The under-back need not be of great capacity, one of five barrels' content would be sufficient, as the liquor is immediately pumped from it to the coppers. The cooler, usually made of inch and quarter plank, should be such as not to admit the worts to be, at any time, more than $2\frac{1}{2}$ inches in depth, the more shallow the better, but much must depend on the size of the cooler and the magnitude of the apartment where it is erected. Two fermenting tuns, of from 15 to 61 barrels' content each, would be adequate for such an establishment; they are usually made from American pine. The cost of these articles may be estimated at—

* Parl. Pap. No. 190, March, 1830.

† Parl. Pap. No. 190, March 1830.

	£	s.	d.
2 Coppers,	60	0	0
1 Mash-keive, or tun	8	0	0
1 Underback,	2	0	0
1 Cooler,	12	0	0
2 Fermenting tuns,	12	0	0
A Wort and water pump,	5	0	0
A Handmill for bruising or grinding malt	10	0	0
40 Barrels, at 11s. ℔ barrel,	22	0	0
70 Half do. at 18s. do.	28	0	0
70 Quarter barrels, at 5s	17	10	0
1 Large Dray,	7	0	0
1 Small Dray,	3	10	0
Casks, stillings, troughs, instruments, &c	40	0	0
Total,	£267	0	0

To work a concern of this kind, it would require two men and a boy constantly, with a cooper occasionally to prepare the casks, the expense of which may be reckoned at £40 annually. From these data may be easily calculated, what capital might be necessary for a concern on a larger scale, and which would be proportionably cheaper.

The common process of brewing is to bruise or grind the malt; the bruising by cylinders is preferred. The grain is then put into the mash-keive which is supplied with water at a heat of 160°, where it is well raked to saturate it with the water, and is allowed to remain for three hours, during which it is covered with a lid, to prevent it absorbing so much of the oxygen of the atmosphere as would render it liable to become sour, to get too cold and not take out the extract. The liquor is now drawn off, when another mashing at a temperature of 180° takes place in the usual manner, and is allowed to stand covered for one hour. A third or final mashing at boiling heat and then standing for one hour, covered as before, completes the operation. If, by any accident, the keive should be set, as it is termed, or not run off, as sometimes happens, boiling water is then introduced and remashed, in order that the extract or fluid may flow the more readily. The produce of the mashing is called worts, and is successively conveyed to the coppers, in which, for about three hours, it is boiled with a proportion of 2½lbs. of hops for every barrel intended to be made. This liquor is sent to the coolers, where it is allowed to reach the temperature of 63° or 64° before it is conveyed into the fermenting-tun, where from 40° to 43° gravity by Dicas's Saccharometer is considered a sufficient strength to yield beer at 20s. ℔ barrel. Half a gallon of good, thick barm is considered necessary to ferment each barrel of malt brewed or mashed. If the malt be good, it should

produce 2½ barrels of 32 gallons English, or from 40 to 41 gallons Irish. If ale be brewed at 40s. the barrel, worts of from 70 to 75lbs. gravity will be sufficient, and each barrel of malt employed in this way, will, after taking off the ale at the gravity above specified, give one barrel of table beer, the worts of which require four hours' boiling on the same hops. The heat in the fermenting-tun should never be allowed to rise more than from four to five degrees, to regulate which, the thermometer is commonly suspended in the vessel. In summer, the heat of the worts put into the tun should be the lowest possible; but in no season should they be allowed to remain more than twelve hours in the cooler. Worts running into the tun generally cool at two degrees, and an allowance should be made on that account; but it is better to have them rather cool than warm, as a few gallons can be easily heated to bring them up to the necessary temperature. After being fermented in the tuns, the time for removal into the casks is indicated by the froth in the tun becoming rather settled; but it is never allowed to fall or get down, as it was termed in the old distilling laws. Every three hours, for the first twenty-four, while the beer is working in the casks, it ought to be filled up by its own discharge collected from the troughs, on which the casks are placed. After the first twenty-four hours it is filled occasionally, in the same manner, every five or six hours; and so on in proportion as the working ceases: in three days it is commonly fit for use. Brown patent malt should be employed to give the liquor colour, if designed for publicans; but if for private use, pale drink is preferred. For fining the liquor, isinglass dissolved in sour beer and strained, is the material generally used, a pint of which is sufficient for a barrel: more than what would clear, would injure it, as it thins it and gives it a tendency to become acid.

When sending out beer and porter from the public breweries, it is a common practice to put in two gallons of unfermented worts into each barrel which causes a sort of fermentation, throwing up a head at the bung and making the liquor appear strong and fresh.

In extensive breweries, the malt is commonly ground by rollers, of which there are more or less employed, according to the extent of the concern, but the mode of brewing is the same. To regulate the heat in the keive, some brewers use what they term a *dash-box*, which is a species of cylinder placed in such a position as to have discharge pipes running into it from the different coppers, with fixed thermometers to ascertain the heat of the liquor, while a tube with a cock conveying cold water, is attached, in order to enable the brewer to convey the liquor into the keive at whatever temperature he may

desire. This obviates the old method of taking the heats in the coppers, and saves much time and trouble. The mashing of the grain is usually performed by machinery as in distilleries, manual labour being dispensed with. When the mashing is completed, in order to prevent the escape of heat, the tun is covered by a fixed suspended lid, around the circumference of which there hangs about two feet of canvass, which, when the raking is finished, is drawn round the circuit of the keive, thereby forming a complete covering: in some large breweries no covering is used. In this stage the liquor is permitted to remain, till the solid parts settle, when the liquor is drawn off into the underback. Three mashings are commonly made to extract the whole of the saccharine matter, the produce of which is sent to the copper, where it is boiled with the hops in the proportion of one pound and an half to a bushel of malt, and when boiled for some time, it is discharged into the jack or hop-back. This vessel has a double bottom, the upper one of which serves as a strainer, being made of iron perforated with holes, through which the liquor exudes, leaving the residuum.

This residuum of the hops is conveyed back to the copper and boiled with the second or third worts, while the liquor thus drained is sent to the cooler. In this stage of the process, the worts remain thinly spread over a large surface for cooling, and sometimes fans, worked by machinery, are placed on the coolers to accelerate this object; but where expedition in cooling is required, a *refrigerator* is generally employed. That of Mr. Avyard is commonly used, which consists of a number of thin metal tubes, arranged in a horizontal position in a cistern, into which there is a constant run of cold water, made to flow over the tubes in order to cool the fluid running through them. Various contrivances for the same purpose have been made, such as metallic plates, so placed in a cylindrical vessel, as to form conduits for the warm worts to flow through one set of plates, while through another set, in a contrary direction, a corresponding quantity of water runs, absorbing the caloric from the worts, and reducing them with great rapidity to the desired temperature. The average temperature at which the worts are set is about 60°, when they are sent into the squares or gyle-tuns, and yeast is added. As soon as the fermentation begins to subside, the liquor is conveyed into fixed fermenting vessels, usually small casks, where the liquor cleanses itself by working off the yeast, carrying with it a quantity of the fluid which falls into troughs prepared for the purpose. The beer thus carried over, is replaced by a quantity taken from a small reservoir adjoining, and the liquor is maintained at the same

level in all the fermenting vessels by means of a regulating cock. When the fermentation has ceased, the liquor is sent into large vats, or barreled and sent into market.

In the brewing of porter, the first mash should be heated in the copper to 150°, in the proportion of two barrels to each quarter of malt, which ought to be a mixture of best pale and brown malt, and should be kept mashing for about three-quarters of an hour, while the liquor should remain on the goods for an hour. The tap of the mash-tun is then opened to let off the liquor as quickly as possible, and the tap should be left open till the next liquor is brought into the tun that the goods may drain. In the mean time, the second liquor has been heating, and may, in from two to three hours, have acquired the heat of 160° ; the quantity being one barrel to a quarter of malt. Mash this, for half or three quarters of an hour; let it stand for one hour, and then let it be run off in the course of half an hour more. At about five and one-half hours from the beginning, the third mash should be made at 180°, the quantity being one barrel to the quarter ; mash this for half an hour, let it stand an hour and tap as before.

A fourth liquor is seldom mashed, but if it be, it may be cold or blood warm, as it is of no use but to make the sour-beer for finings ; and it is of little consequence how it is done. Some brewers use it for the first liquor of the next brewing ; but this, perhaps, is not a good plan, as it may taint the whole brewing.

These worts are to be boiled with from twelve to fourteen pounds of hops to the quarter of malt, if the liquor is intended for keeping eight or twelve months; but, in the ordinary run of porter not intended for keeping, five pounds may be sufficient. The first worts should be boiled one hour, the second two, and the third four hours.

The worts are now to be cooled down as expeditiously as the weather will permit, to about 60°, if the medium heat of the atmosphere be about 60°. If it be more or less, allowance must be made. All the three worts are to be brought together into the gyle-tun, and about five pints of yeast to the quarter of malt put in, and due time allowed for fermentation and cleansing. The criterion for cleansing is the attenuation, and one great point in porter making is, that of separating the barm completely from the liquor. The proportion of colouring is arbitrary, as it greatly depends on the colour of the malt. Formerly it was the practice to employ Socotorine aloes, in the proportion of half an ounce to a barrel, in the second worts; and to give a retentive head, as much salt of steel as would lie on a half-crown piece was added with the finings to a barrel. Quassia, in the proportion of a pound to about twenty barrels, was used as a substitute for the aloes,

and copperas for the salt of steel, but these ingredients being noxious and unwholesome, have been discontinued.

As the colour of porter is chiefly to be attributed to the quantity of brown or roasted malt used, care is taken to infuse such a quantity of that material as will produce the degree of colour required, and fining is effected by isinglass dissolved in stale beer, till it becomes of a glutinous consistence, a pint of which is the usual allowance for a barrel, but sometimes more is necessary.

A good colouring article is procured by moistening a quantity of brown sugar with water, spreading it in a frying-pan to about an inch deep, placed on a fire, and stirred until it is ignited; when it is burned sufficiently, the flame is extinguished, and water is added to the residuum till it has the consistency of molasses, and it is then mixed with the worts in the copper in such quantity as the depth of colour requires.

In Ireland, the brewing trade, though not so extensive as in England, is, notwithstanding, conducted on a respectable scale. In Cork, Bandon, Limerick, Fermoy, Waterford, Clogheen, Clonmel, Kilkenny, and Carlow, are the principal establishments of the south. That of Beamish and Crawford, situated in the South Main-street, Cork, is the most considerable; it is elegantly fitted up, having appropriate machinery, with vessels on an extensive scale, and is capable of brewing upwards of 150,000 barrels of porter annually. The concerns of Messrs. Lane and Co., W. Cashman and Sons, W. Condon and Co., in that city, are respectably conducted, and the liquor produced is of superior quality. In the north, there are many highly respectable breweries, viz. Drogheda, Castlebellingham, Dundalk, Newry, Armagh, Monaghan, Dungannon, Donoughmore, Lurgan, Belfast, and Derry, where malt drink is manufactured to great perfection. The ales of Drogheda, Castlebellingham, Lurgan and Belfast, have obtained a high character, while the porter and ales of Dublin are accounted equal to any brewed in the empire: the extensive exportation of these articles is a proof of this assertion, for, until within these few years, there was not any export of porter to England, the British manufacturers supplying that commodity; and such was the force of prejudice, that nothing but an English beverage could satisfy an Irish palate. The house of Messrs. Arthur Guinness, Sons, & Co., was the first to open the trade of exportation, and they have been successfully followed by several other respectable houses in Dublin. The premises of this most enterprising firm are situated at James's Gate, in the west of the city. The range of buildings covers nearly four acres; the arrangement and machinery are upon the most complete and efficient plan, and every department is so systematic and well-

managed, that the work proceeds with the utmost precision and regularity ; no confusion, bustle, nor disorder ensues; the grain is taken up, and weighed in its passage to the lofts, by ingenious mechanical contrivances. There are three mash-tuns capable of mashing 600 barrels at a brewing, with three coppers containing 2,040 barrels. The mashing is performed by rakes worked by steam-engines, of which there are two of fifteen horse-power that work all the machinery on the premises.

Under the bottom of the mash-keives there is a screw fixed in a trough, so contrived as to draw off all the grains into an adjoining yard, where they are disposed of to the public. The labour of one man is sufficient for a keive, through a hole between the real and artificial bottom of which he is employed to discharge the grains, to be carried off by the screw. This aperture is secured and rendered water-tight by means of a cover fastened down to prevent the egress of the liquid. There are three immense fermenting tuns, and forty-four vats calculated to hold from 350 to nearly 3,000 barrels; three of which contain the latter quantity.

In one apartment are an immense number of fixed casks in which the liquor undergoes the process of cleansing, and in another a number of cylindrical vessels, termed *rounds ;* there are 100 of these, holding six barrels each, so arranged in rows as to admit between them large and deep troughs to hold the discharge of the barm, as it works off from each vessel.

The number of persons employed is very great, among which are no less than eighty coopers. The concern is lighted with gas, and to secure it from fire, there are pipes so contrived that any quantity of water can be instantaneously conveyed to every part of the premises ; these pipes are supplied from a cistern holding 1,100 barrels, and so elevated as to command the entire establishment. The quantity of porter capable of being sent out annually, is, at an average, upwards of 100,000 barrels, that of the other brewers of the city is equally respectable in proportion to the magnitude of their concerns. The reputation of the Dublin double X porter being so high, the demand for it in England is almost incredible ; and it is said to be improved by the voyage, the motion of which is thought to operate upon it, in the same manner, as Madeira-wine is acted on by the agitation of the ship. The export houses are Messrs. Arthur Guinness, Sons, and Co., Manders and Powell, Watkins, D'Arcy and Co., O'Connell and Co., L. Finn, Messrs. Sweetman, and the Messrs. Conlan, &c. &c. Besides the places already mentioned, there are several breweries in Ireland which manufacture excellent malt-drink ; of these, the esta-

blishment of Mr. Cassidy at Monasterevan, and that of Darley & Co. at Stillorgan, are eminent, while the neat concern worked by Mr. Colgan at Kilcock, endeavours to rival more extensive houses in the quality of its liquors.

The practice of domestic brewing is not carried on to any extent in Ireland, the making of malt-drink being almost exclusively confined to the public establishments. The art of extracting a good ale, or beer, from malt is very simple, and it is surprising this has been so long overlooked when the means are sufficiently ample for the purpose. Many have neglected it on account of their ignorance of the process, others from a fear of the revenue laws, and some from not having proper apparatus, and the public drink being so easily procured. From a careful perusal, however, of what has been just written as well as the account given of domestic brewing in England, it will be seen that it might be to the advantage of the landlords and farmers to brew for themselves. This practice could not fail at all times to produce a pleasing, wholesome beverage, alike acceptable to the poor and to the rich.

To persons desirous of more minute and extensive knowledge on this subject, the following works may be consulted to advantage, viz: Shannon's Treatise on Practical Brewing, Richardson's Philosophical Principles of the Science of Brewing, Combrune's Theory and Practice of Brewing, Baverstock on Brewing, the Art of Brewing in the Library of Useful Knowledge, and the several articles on the subject in the different Encyclopædias, &c.

From the first period of the introduction of *aqua vitæ*, the distillation of ardent spirits, with the exceptions noticed, remained uncontroled by duty till the Restoration, at which time it had acquired sufficient magnitude to be deemed a productive article of revenue. On the 25th December, 1661, a duty of four-pence was established on every gallon of *aqua vitæ* distilled in the kingdom.

This duty was collected by means of a system of survey calculated to ascertain the quantities of wash, low-wines, and spirits produced in a given period, and as the distiller was not obliged to shew any stated quantity of work in the month, (that being the period for making up the accounts,) the increase or decrease depended, in a great measure, on the vigilance and integrity of the officer, whose business it was to attend the distillery.

Shortly after the accession of George III. a specific quantum of work in the way of *charges* or doublings was laid on the stills of this kingdom, which, in 1779, the time at which the principal change took place,* numbered 1,152, producing a revenue of £63,818. In 1782,

* 19 Geo. 3.

on a five hundred gallon still there were *four* doublings, and the following year *eight*, the duty being fourteen-pence per gallon ; while in 1792, there were sixteen charges on two hundred gallon stills, the general size wrought at that time. The charges gradually increased until 1806, when the trade assumed a degree of importance that it had not previously possessed, being then principally confined to a few individuals of weighty capital.*

At this period, the government refused to license stills under five hundred gallons, and, in the same year, all the laws relating to the distillery trade in the kingdom were compressed into one act,† in which every thing relating to the business was fully defined. Among other matters, it was found to be necessary to fix the dimensions of stills, to place the process on an equitable footing, as it was obvious that if these dimensions were not determined, the distillers could produce a much greater quantity than the law required, by making the bottoms of their stills as large as possible, so as to have the advantage of exposing more surface to the heat of the furnace.

It was ordained, that the diameter of every still, taken in the middle part, most remote from the bottom, should be to the altitude of each still, taken in a perpendicular line from the centre of the diameter to the bottom, in the proportion of not more than three to one—*i. e.*, for every inch of altitude, the diameter should not exceed three inches, and so on in proportion.

This law ceased to operate on the 10th of October, 1823. It was soon discovered that the ingenuity of the Irish distillers, like that of their Scotch neighbours, when the license system prevailed, far outstript the enactments of the legislature in the extent of work. In 1807, it was considered prudent to license stills of two hundred gallons and upwards ; the work was then considerably increased on all stills from 200 to 1250 gallons' capacity, but no addition was made at that time to the work of larger stills. In 1815, there were 5,675 per cent. added, on an average to the proportions of work previously required ; and, in the same year, an act was passed allowing stills of from forty-four to one hundred gallons to be licensed. Considerable advantages were granted to these, in expectation that they might tend to the suppression of illicit distillation, it being intended that they should be confined to those districts of country in which that baneful practice prevailed.

The charges on those small stills were far short of the proportion allotted to the larger ones. A still of one hundred gallons' contents

* Vide Addenda for the number of stills and their contents for some years prior to 1806, with a scale of work required by stills in that year.

† 46 Geo. 3. c. 88.

was also obliged to perform ninety charges monthly. Under this regulation also, it was soon discovered that the distillers turned the advantages thus granted them to their own private emoluments, instead of preparing whiskey similar to the illicit spirit commonly called *Innishowen*,* or *Potheen*, which was the intention and expectation of government. In consequence of this, their work was increased in 1817, to two hundred doublings monthly; notwithstanding this great addition, the proprietors of large distilleries were jealous of the superior advantages which they imputed to the smaller stills. In 1816, twenty per cent. was again added to the work of stills exceeding one hundred gallons, and in 1817, ten per cent. more.

To gratify the curious, there is given in a table of the Addenda, a correct list of all the stills that were at work in Ireland in the month of February 1818, with the quantity of spirits produced by them weekly, in proportion to their doublings or charges :—also the average consumption of grain and coals in each, specifying such as were obliged, from their local situation, to use turf. On comparing that table with the scale of work for 1806, as exhibited in the table of the Addenda, the increase appears prodigious, and indeed almost incredible It is a striking instance of the results produced by the ingenuity and activity of man when powerfully excited; for it is a well-known fact, that when work in distilleries was not half so great as it then was, much more difficulty was experienced in its performance. Such was the skill acquired by practice, that four doublings could be worked off in less than an hour, which at one time was the lengthened labour of twenty-eight days.

To the Scotch distillers who had established themselves in the country, and whose experience enabled them to introduce improvements, previously unknown, this increase, in a great measure, may be attributed. But great as the quantity unquestionably was, the market was clandestinely supplied with a very considerable surplus, which by some has been stated as a fifth, but by others, to approach nearly to a half of the whole consumption.

At various times, plans have been suggested for the improvement of distilleries. Among the many, one of a curious nature was proposed by Mr. Birch, of Roscrea, calculated to obviate the difficulty of procuring fuel in the interior of the country. That gentleman shewed that it was practicable to work a still by the application of steam much more advantageously than by the use of either turf or

* *Innishowen* is a barony in the county of Donegal, pre-eminent for illicit distillation, and the superior quality of its spirits, and *Potheen* was a name given to this drink on account of its being distilled in a small pot.

coals; and that it would, besides, produce a greater quantity of spirits in a given time, than could be done by any other known process.

What gave rise to this method, was the great scarcity of fuel experienced at the Roscrea distillery, occasioned by the badness and want of turf in wet seasons. In the year 1818, the Board of Excise was solicited for permission to work by steam; and, notwithstanding the determined opposition of the distillers in Dublin, the plan was put into execution under the superintendence of an able professor of chemistry assisted by several practical revenue officers. In carrying on the experiment, the liquor in the still was boiled by the force of steam, raised in a boiler prepared for that purpose, and conveyed by a pipe which communicated with the exterior of the still only, filling up with steam the spaces or interstices in the body of the still, and also the space between the still itself and its case, which case was made of wood, and every part of it exposed to view.

Previous to this trial, which was conducted at Roscrea, there were independently of the steam-engine, four furnaces; one for the still, and one for each copper, which contained 212 superficial feet; but by the proposed plan of working these furnaces, they were reduced to two, containing only sixty-four superficial feet subject to fire influence. It, moreover, appeared that steam, not exceeding 225° of temperature, was able to produce the highest charge of the excise laws with a saving of upwards of four-fifths of the fuel, and the same of all other attendant expenses. According to a calculation made at the time, the expense of working a two hundred gallons' still with coal, amounted to £4390, of which £540 only afforded employment to the people, whereas, when worked with turf, employment would be given to the amount of £8,316. 13*s.* 4*d.*; all circulating at home to the best advantage.

The great saving of fuel effected by the steam system, might appear consistent with the important consideration of employment to the poor; but, although a still worked by steam would not consume more than one-fifth of the quantity of turf or coal, that would be required by the common mode, yet it was argued, that for the same reason it would be the means of erecting in the interior ten distilleries for one, and thereby diffusing the business more generally and with greater effect.

This ingenious method of distilling was ultimately rejected by the Board of Excise, on the principle that it was considered to afford facilities to smuggling under the existing regulations; but, since the act of the 4 Geo. IV. chap. 94, has relieved the distiller from the production of a limited quantity in a given time, this steam method

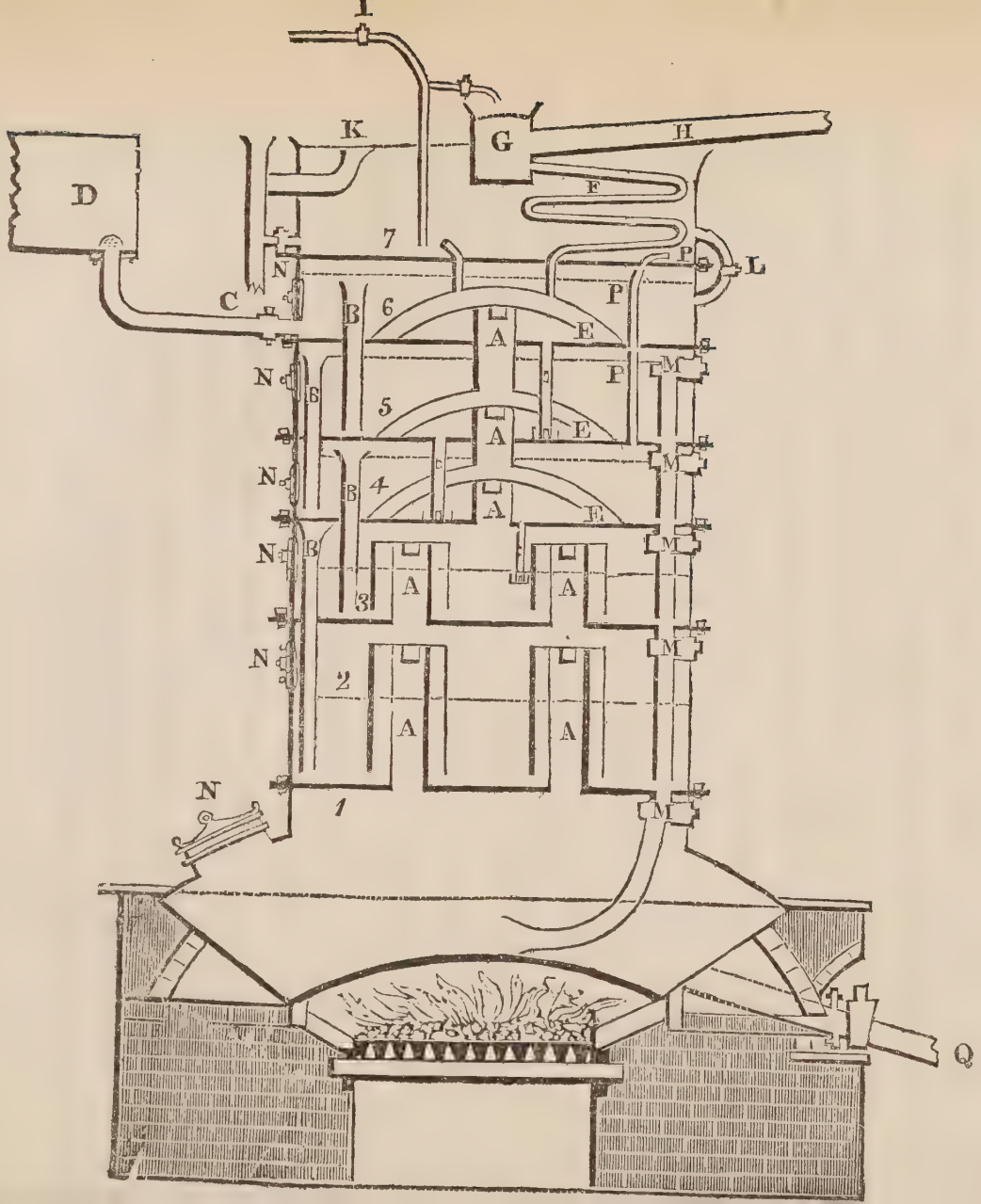
is worthy of a serious consideration, and, perhaps, further experience would render its adoption of considerable benefit in the remote parts of the country, where native fuel is scarce, and foreign cannot be procured but at an enormous expense.

As bearing on the subject, it may prove satisfactory to practical as well as speculative distillers, to bring under their consideration an enumeration and a description of some of the principal inventions of modern times in the art of distillation, which have had for their object a saving of fuel, time, and labour, and an improvement in the article manufactured. In endeavouring to effect these purposes, the French have been peculiarly industrious; and to their ingenuity this country is indebted for many valuable suggestions.

Amongst the first attempts to effect continuous distillation, was that of M. Jean Jeaques St. Marc, who was a veterinary surgeon attached to Buonaparte's personal staff. After the battle of Waterloo, he became a distiller in France; from whence he removed to England about the year 1823. There he induced some enterprising capitalists to embark with him in the speculation of making brandy from potatoes; and a distillery for that purpose, upon an extensive scale, was erected near London, together with a rectifying establishment; both of which, after working three years, were broken up, and disposed of at a loss of between forty and fifty thousand pounds.

During this period, St. Marc availed himself of the operations in these works to improve the still he had been working, the principle of which, being that of *continuous* distillation, he brought from France; in this he was assisted by M. Peire Alegrè, a chemist of considerable celebrity. Having completed the machinery, he, in 1827, obtained for the invention, a patent for the United Kingdom, and immediately after disposed of it to some gentlemen in London, and returned to his native country.

The adaptation of this apparatus to distillation in England then devolved on Mr. Joseph Budworth Sharp, under whose judicious arrangement and directions, some of the most extensive establishments in London, Bristol, Liverpool, and other parts of England, have been worked with great success. One of these stills at the rectifying concern of Messrs. J. and W. Nicholson at Clerkenwell, at one operation, produced the enormous quantity of one thousand gallons of gin in one hour, the cleansing and flavouring processes proceeding at the same time. This apparatus was introduced into the West Indies, and several of the colonies, with, it is said, considerable advantage, inasmuch as it produced spirits of great strength, with a saving of fuel, puncheons, freight, and shipping-charges, in the exportation of rum.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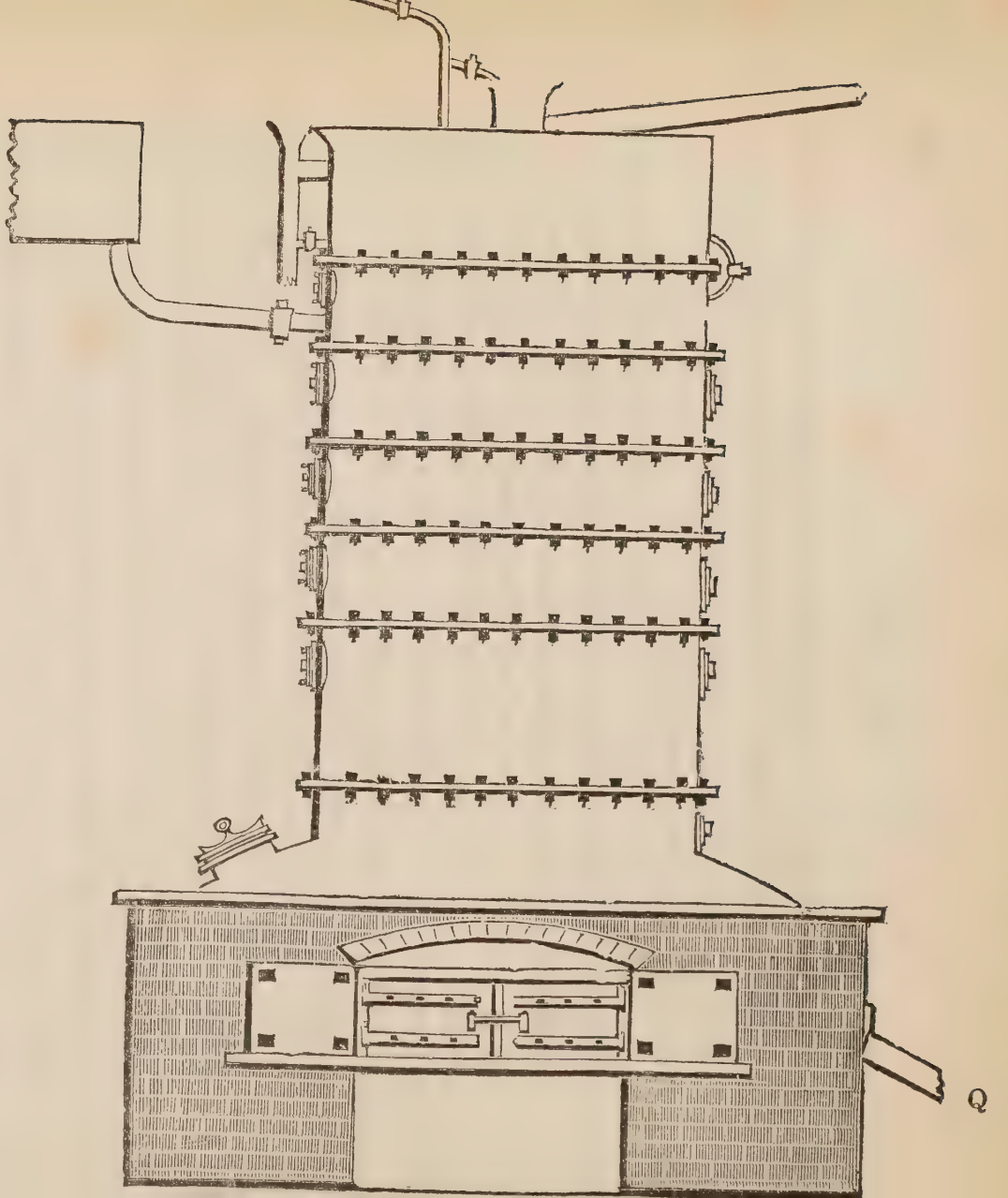
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The foregoing engraving and following description of the apparatus, will be found to differ somewhat from those of the patentees, as well as from those in the London Encyclopædia; both of these having been published, previously to the system being reduced to practice upon an extended scale of operation.

It will be seen by the plate, with a delineation of which I have been favoured by Mr. John Rees, a proprietor, that this apparatus consists of seven coppers placed one above another, numbered in the section, fig. I.—1 to 7. Eight were originally intended, but seven have been found sufficient; six to contain wash, and the upper one, water. These coppers, or compartments, are attached by flanges and bolts, and communicate with each other by the double tubes, A, through which the vapour ascends; and by the pipes B, by means of which the wash descends, from one copper to another, in succession, from the uppermost but one, N 6, into which it is introduced by a pipe and cock C, from the wash-charger D; the intermediate charger, described by the patentees, as surrounding the upper compartment, having been dispensed with. The lowest, or first copper does not differ from an ordinary still of similar dimensions. The second and third, each contain four of the double tubes, A, and two of the pipes, B. The fourth, fifth, and sixth coppers, have also the last-mentioned pipes, and one double tube A, in each, placed under a semispherical vessel, or dome E, constructed upon, and tightly flanged and bolted to the bottom of the several coppers just mentioned. The vapour, after undergoing the process in the several domes, which will, hereafter, be described, passes into six spiral tubes or vertical worms F, immersed in the water of the upper compartment, and attached to the top of the dome in No. 6. One only of these worms is shown in the section, and two of the attaching pipes. The upper end of the vertical worms communicates with the chamber G, which is surmounted by a small dome and pan, the latter containing water; after undergoing the final control of which, the vapour passes off by the line over H, to the common worm for condensation.

The water is introduced into the upper compartment by the pipe and cocks, I, from the sky cooler, and the waste water, which is generally used to scald the backs, is conveyed away by the pipe K, with a cock to empty the compartment entirely, when required. There is also a cock, L, by which water can be conveyed from this into all the other compartments, each of them being furnished with a cock, M, communicating with that next below it, for the purpose of

bringing down the wash at the close of a back; and also with a man-hole N, to admit a person to cleanse the several compartments. The small inverted double tubes O, are for the conveyance of the condensed portion of the vapour from the bottom of the several domes, into the third compartment, for re-distillation. And the pipes P, are to carry off the small portion of vapour generated by the wash round the domes. This is conveyed into a coil of worms inclining towards bent pipe P, to which it is attached, passing through the water of the upper compartment, and communicating with the second coil of the ordinary worm.

The lower compartment has only the usual discharge-cock Q, the second not having been found requisite. Thus one compartment, and several articles have been dispensed with; all tending to simplify the operation. But the rouser or chains, which M. St. Marc alleges were unnecessary, have been found indispensable to prevent burning; as have also valves in the three lower compartments, to provide against the remotest chance of collapsion. These compartments have glass gauges to them, to ascertain, at all times, the level of wash they contain. The foregoing being a description of the apparatus, it only remains to add a short detail of its operation. The first three coppers (of which the second and third only are intersected by the double pipes,) distil almost at the same time; the lowest being that submitted to the action of the fire, operates on the others by the discharge of its vapour, which ascending, by means of the pipes, passes into the wash, and is there condensed, infusing its caloric to that liquid, which is thereby quickly brought into a boiling state. The over power from the wash in the second section or compartment, passes into the third copper with similar effect.

The new vapour, necessarily stronger than the first, ascends into the fourth section, where it is received under a semispherical dome, which prevents it from communicating directly with the cold wash contained in that copper. In this place the most watery portion of the vapour is condensed, and it gives up its caloric, which contributes to heat the wash that surrounds the dome. The most volatile or spirituous part, which passes into the dome of the fifth section, experiences the same effect on coming in contact with a cold body.

The same operation takes place from one dome to another up to the last. As the vapour, which rises, is exposed to a cold temperature, it is condensed, yielding its caloric; and it is after a succession of condensation that the spirit becomes divested of all weak and watery particles, which, thus liquified, return from one dome to another,

being partially re-distilled in their progress, according to their degree of gravity, until the least spirituous reaches the third copper, there to undergo a new distillation.

To explain why the watery vapour is forced to return to the third copper, and is there found totally separated from the alcohol, it is sufficient to state, that water does not boil under a heat of 212° of Fahrenheit, while alcohol boils at a heat of 173°. When, therefore, the watery and alcoholic vapours rise and are successively received in one or more atmospheres of from 174° to 190°, or 200°, the watery vapour becomes separated from the alcoholic and is condensed, and the latter only passes out and is received at the desired strength, care being taken to regulate the temperature of the water contained in the uppermost copper, which is traversed by the strongest and most alcoholic vapour, before it passes into the worm.

From the foregoing particulars, it is evident that a large portion of the spirit is distilled by vapour, or steam, and is, consequently, more pure than that obtained by the ordinary apparatus. If, therefore, as is generally supposed, that all bad flavour arises from long and violent exposure of the wash to the action of the fire, this process is calculated to obviate entirely that injurious effect, and to obtain a spirit wholly divested of any empyreumatic or disagreeable taste. One distillation only is effected by the fire; this is immediately succeeded by two vapour or steam distillations, and subsequently by four purifying consecutive processes, which divest the spirit of all impurities, and it comes over, at one operation, of the strength of 35 or 40 per cent. over proof by Sykes's hydrometer.

A still of seven compartments, such as described, will produce spirits no stronger than 35 or 40 per cent. above proof; but by increasing the number of coppers or sections, there might be obtained, by a single operation, the highest pure alcohol of the chemists.

To ascertain the precise time for charging after the exhaustion of the wash in the lower copper, it is only necessary to open what is called the proof-cock placed in its side; and if the vapour issuing from it, will ignite on the application of a candle, it is evident a fresh charge is wanting. The discharge of the spent wash from the lowest vessel, the supply from the next copper to replace it, and the opening of the cock in the pipe, communicating between the charger and the top of the still to admit more wash, are all the work of about a minute, during which distillation never ceases.

The advantages of this apparatus are numerous, but may be briefly stated to consist in the saving of about two-thirds of the fuel usually

consumed; an increased produce, by economising what is lost by evaporation in the three operations, with their pumpings, &c. on the ordinary system—a considerable saving of labour, there being but one furnace, and one tail-pipe instead of three, or sometimes four. To which may be added the advantage of dispensing with low-wines and feints' receivers and chargers, together with their connexions and pumps, and the power required to put the latter in operation.

A safe of a superior nature has been constructed by Mr. Sharpe, one of the patentees; it is attached to the end of the worm, and holds a large glass cylinder in which a thermometer is suspended; at each side of this cylinder are two smaller ones in which are placed hydrometers, one for ascertaining the strength of the liquor when *above*, and the other when *below* proof. The safe is so ingeniously contrived as to enable the distiller to see the strength and colour of the spirits, and also to take a sample, which, however, is registered against him upon a dial, and no spirit can be surreptitiously obtained, while it serves to prevent fraud both on the proprietor and the revenue.

The cost of one of these stills with all its appendages, when completely ready for work, on the largest scale, is not less than from £1,600 to £1,700, but from the number of years that it will stand distillation, it may be accounted cheaper than any of those belonging to the old system, the bottom being the only part liable to injury; but that is easily supplied, and with expense comparatively trifling. An objection has been urged against this still, that it deprives the spirit of the essential oil, which imparts that flavour so familiar to, and popular amongst Irishmen.

The apparatus invented by M. M. Adam and Duportal for producing alcohol at a single process is generally known, and those who are acquainted with Wolfe's Apparatus so common in chemical laboratories, will understand clearly the principles on which this ingenious machinery is constructed, and the full effect of its operations.

The still of Professor Solimani which has undergone improvements by Curadau is based on the principles of the still of Adam and Duportal. It consists of a boiler and three refrigeratories, and spirits of any strength can be obtained by means of it; but it is better adapted for the distillation of wine than of wash. A drawing and description of this still may be found in the Register of Arts and Journal of Patent Inventions.

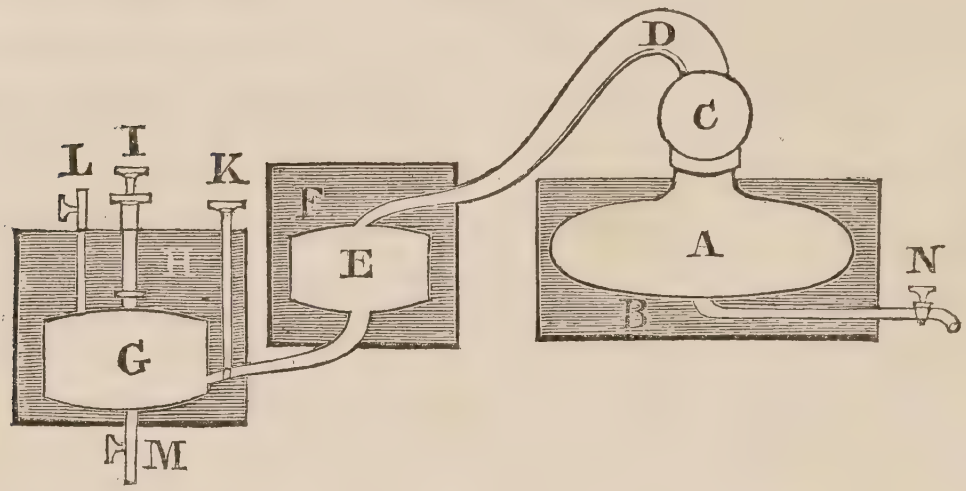
Mr. Winter, a distiller in France, constructed an apparatus on the principle, that the mixed vapours of water and spirits are not condensable at the same degree of temperature, water requiring a

heat above 212° to be kept in a state of vapour, while spirits of intense strength will evaporate at a heat very little above the common atmospheric temperature. This apparatus is applicable to stills of every description, and enables the distiller to extract the whole of the spirits in the wash, at a single operation. Its great excellence consists in condensing the aqueous portion of the mixed vapour from the still before passing into the worm. To effect this purpose, the vapours from the still are first made to enter into a peculiar kind of receiver surrounded by a water-bath, the temperature of which is uniformly preserved at 170°, or thereabouts, according to the strength of the spirit required. In this receiver the aqueous particles, or those that require a heat of more than 170° to be kept in a state of vapour, are condensed, while the spirituous vapours from their superior levity pass into the second receiver. This second receiver is also of a peculiar construction, and being kept at a lower temperature than the first (at 140° or less), the whole of the weaker vapour, or that which is condensable at from 140° to 170° of temperature, is therein reduced into a liquid state, while the strong, spirituous vapour ascending alone, through certain very narrow spaces, contained between concentric cylinders, into the upper part of the apparatus, is there collected into a third receiver prior to passing into the worm. The worm is surrounded as usual with cold-water, whose powerful refrigerating effect upon the strong, spirituous vapour with which it is charged, causes it to pass rapidly into the fluid state.

With this apparatus, it is thought, the distiller would have no occasion to send his spirits to the rectifier, an attention to the temperature of the two baths being all that is required for rectification in the most perfect manner. As a confirmation of the value of the apparatus it is stated, that feints 80 per cent under proof, produced, at one operation, spirits 55 per cent over proof.

The late ingenious Mr. Watt, having ascertained that liquids boiled *in vacuo* at a much lower temperature than when under the pressure of the atmosphere, applied the discovery to distillation. The saving of fuel by distilling *in vacuo* would be immense, since it is well known that the heat of the hand in an exhausted receiver is sufficient to make water boil. All liquids boil in a vacuum at about 145° lower than in the open air, under a pressure of thirty inches of mercury; water, therefore, would boil in a vacuum of 67°. After him Mr. Tritton contrived an apparatus for this purpose, which from its simplicity, is deserving of attention. The vessels are arranged in the manner of Wolfe's apparatus, as represented in the subjoined drawing, and of such strength as to bear, when empty, the external

atmospheric pressure. The vacuum is produced and maintained by air-pumps, or by the admission of steam to expel the air, and afterwards condensing the steam into water.



A is the body of the still, B is a water bath into which it is immersed, which prevents the liquor from burning or acquiring an empyreumatic flavour: C is the head or capital, and D its neck curving downwards and entering the condensing vessel, E F is a refrigeratory or close vessel containing cold water for converting the spirituous vapours, which, having been raised in the still, are contained in the vessel E. Attached to the bottom of this vessel, is a pipe for conveying the liquid and the uncondensed vapour into a vessel G, which being surrounded with cold water contained in the vessel H, acts also as a refrigeratory and reduces the whole of the remaining vapour into a liquid state. I is an air pump for effecting a vacuum in the vessels A, E, G; K is a stop-cock for preventing any communication between the vessels E and G, when the contents of G are drawn off by the cock M, by which means a vacuum is preserved during that operation in the vessel E and the still. I is an air cock for admitting air into the vessel G to allow the contents to run out at M: N is a discharge cock, to the still A. Without a vacuum being produced the matter in the still can never be heated beyond 212°, that being the greatest heat that the surrounding water is capable of receiving or transmitting.

As this apparatus affords a convenient and easy mode of removing the pressure of the atmosphere by the air-pump, the distillation is effected at the low temperature of 132°, and the regular application of so low a degree of heat cannot fail to produce a spirit of the clearest and strongest quality. On this principle of boiling *in vacuo* several machines have been contrived for obtaining vegetable extracts for

medicinal purposes, and it appears that they have been attended with great practical advantages. The management, it would seem, depends upon the fact, that vegetable bodies, when heated at lower temperatures than the boiling point of water, suffer less change in their essential properties than when exposed to greater heat. Dr. Arnott observes, that the essential oils of lavender, peppermint, &c. never had the natural flavour and virtues of the plants until within the last few years, since this plan was adopted.* Why should not, therefore, the produce of the vinous fermentation distilled in this way, retain more of its valuable properties than when submitted to higher temperatures under atmospheric influences.

Sir Anthony Perrier, of Cork, invented a mode of distilling by which the liquor is allowed to flow gradually in a thin stratum through a number of circular channels over a heated surface, while drag chains hanging in loops in those channels are made to revolve by the operation of a wheel and pinion. These agitate the liquor and prevent any settlement, or burning, at the bottom of the vessel. This method is not now practised, and although evincing considerable judgment and ability in the inventor, has not been productive of any eventual service worthy of further notice.

Mr. Grimble, a London distiller, obtained a patent for a still, the peculiarity of which consists in a kind of refrigeratory composed of a great number of small copper tubes placed vertically over the head of the body in the boiler. Through these, the vapours must pass in their way to the condensing worm, while, by the air circulating freely amongst them, the heat of the ascending vapour is sufficiently abstracted to cause the aqueous portion to condense and fall back into the still, so that nothing but strong spirits passes into the worm. This contrivance has the reputation of being very successful in its operations.

Mr. Evans has contrived a still of a novel character, and for which he has procured a patent. It consists of a copper cylinder, which is made to revolve vertically over the furnace by turning on a horizontal axis. A strong fire is applied to it, and the gross matter in the still is prevented from burning by the constant rotatory motion of the wash. The vapour, as it is generated, passes through the hollow axis of the still into a large worm, which also revolves horizontally upon hollow axes, through one of which the vapour enters; the

* Elements of Physics, vol i. pp. 386–7.

To effect a vacuum, Dr. Arnott has contrived a simple method, which, if the reader wishes to know, he will find in the volume and pages here quoted.

chamber which contains this revolving worm, is kept at a temperature suited to condense the aqueous vapour and to allow the spirituous to pass on through the other hollow axis to a refrigeratory of the ordinary kind. The large worm, as it revolves, conducts the water obtained by the condensation of the aqueous vapour back into the still, something after the manner of the water-screw of Archimedes.

The manner of charging the still, as well as the other arrangements connected with this plan, reflect great credit upon the inventor. From a consideration that alcohol is not altogether the result of the vinous fermentation but the product of a subsequent elementary change, that a greater quantity of spirit might be obtained by subjecting the fermented liquor under distillation to a high instead of a low temperature, and to effect this object without carbonizing the substances submitted to the action of the fire, the rotatory still and worm were contrived by Mr. Evans.*

The patent distilling apparatus of Mr. Williams is distinguished by an enlarged capacity of the still-head for the separation of the aqueous vapour by condensation, previous to its passing into the refrigeratory, as also in a peculiar arrangement of vertical tubes, and a flattened worm in octangular coils. To these is affixed an additional apparatus, containing a refrigerating saline mixture for the more effectual cooling of the spirit. This contrivance is well adapted for warm climates, and for overcoming obstacles created by the high temperature of the atmosphere. An ingenious distilling apparatus was contrived by Mr. Hebert, (editor of the Register of Arts and Journal of Patent Inventions,) by which the wash or wine is made to spread, in an extremely thin and expansive sheet, over a large hollow cone of copper and descending by its own gravity to the bottom. Within this cone is the fire or water bath which causes a rapid evaporization passing between the surface of the still and an external casing also of a conical figure; thence passing along the neck, it enters a convoluted tube in a wash reservoir. The wash in this vessel being of a lower temperature, causes a portion of the vapour to condense and fall into a recipient beneath, in which also the uncondensed part is received previous to passing into a refrigeratory. From this it ascends through numerous small metallic tubes surrounded with cold water, and by this means is instantly condensed. The vapour in passing through the convoluted tube, imparts a great portion of its caloric to the wash that surrounds it, and the wash in consequence comes upon the still hot, requiring but a slight accession of heat to force it off in vapour.

‡ Vide the Register of Arts and Journal of Patent Inventions, vol. iv. p. 151.

This vapour, likewise, gives back the caloric it received, so that the quantity of fuel required to work this apparatus is exceedingly small. The work is so uniform, that there is no necessity of stopping the process to discharge and recharge; and the work continues uninterruptedly so long as there is a constant supply of wash.

The plan of Mr. James Frazer, of Hounsditch, London, for which a patent was obtained in 1826, differs from others in several particulars. The wash-still, instead of being exposed to the fire, is immersed in boiling water, the vapour from which enters the low-wines' still, where it is condensed. The wine that abstracts the heat from the wash becomes itself vapourized and is conducted into a refrigeratory. The first and second distillations are, in this manner, conducted together by a continuous process.

Mr. Shannon, author of the Treatise on Brewing and other works, invented a still of a cylindrical form with double ends, by which he thought the heat and flame should be so diffused around, that the whole mass of liquid would receive almost an equal portion of the fire, and which, in his estimation, would be much more safe from accidents than the common still. This still was made to admit another at the top sufficiently large for a spirit still to rectify the spirit drawn from the wash in the under-still, so that it could be adapted to either a gross or rectifying manufactory. It was intended to possess the advantages and effect the work of two stills at the same time, the raw spirit running from the lowest still or cylinder while the rectification of the spirit or the compounding of it into brandy or gin, was going on in the upper-still with the same fuel and attendance; and this appears to be the first attempt at *continuous* distillation in Great Britain. Adapted to this invention is a refrigerator consisting of a number of oblong squares, arranged in a zig-zag manner, and continues in a descending chain like the common worm, and may be compared to a very large worm flattened to two or three inches in width. To preserve the vapour within the folds of this machine from coming in contact with the atmosphere, Mr. Shannon contrived a condensing valve, to prevent the waste of the ethereal and more volatile parts of the vapour from being carried off by the elastic air generated, or extricated in the process.

The object of Mr. Shannon was principally to prevent the trouble, delay, and expense of applying a much greater heat than is necessary to raise the vapour out of the still in the old system, and then compress it again to descend through a column of air within,

heavier than itself, and overcome the counter-pressure of the atmosphere without, which protracts the process of distilling, overheats the wash, elevates the grosser particles, and impairs the quality of the spirits of the first character, in a degree that has seldom been remedied by any succeeding process of cleansing, flavouring, or rectifying.

Mr. W. Gutteridge, of 30, Budge-row, London, has invented a still of a very peculiar nature, which he denominates the Torricellian Still, after Torricelli, the Italian Philosopher. It is a self-supplying apparatus, the advantages of which are stated by him to be numerous and unprecedented, and founded on the theory of atmospheric pressure. The arrangement of the operations are:—

1st, Raising cold water by means of a syphon from any level below the surface of the ground, on which the distillery is erected.

2nd, Conveying any quantity of warm water into the head of the still from the top of the tank, after condensing the alcoholic vapour in the final condenser, and so diffusing it on its entering, as to increase its temperature to 176° before coming into contact with the vapour conductor. By this contrivance, one syphon is made to raise cold water to the tank, and hot water to the still-head at the same time.

3rd, The vapour conductor in the still is made to condense a maximum of aqueous vapour with a minimum of water, thereby obtaining a strong and pure spirit in the shortest time possible.

4th, The power of ascertaining when the feints are rising on the body without interrupting the delivery of the superior spirit, and preventing them from passing through the still-head and final condenser, by which means neither this condenser nor the pure spirit can ever be contaminated with the feints; also in determining during the coming of the spirit from the head when the whole of the spirit is separated from the charge in the body.

5th, Retaining in that part of the still-head, called the recipient, the feints obtained from each charge, their re-distillation and rectification in each succeeding charge during a period of any duration, by which means no feints will appear except from the last charge.

6th, Keeping wash, or the material to be distilled, from the fire, and distilling wholly by steam at the atmospheric pressure, if judged expedient.

7th, The final condensers acting more effectually than the common worms.

8th, The reduction of the height of this apparatus compared with other stills, places it under the hand of the distiller for more accurate and ready examination.

For further particulars respecting Mr. Gutteridge's still, the reader is referred to his own explanatory book, with the various engravings therein illustrative of the subject.

A still for continued distillation was, some time since, erected in Ireland by Mr. William Morrissy, for which he took out a patent. It was considered that he had taken this idea from one which he had seen either in Spain or Portugal. But the apparatus was found not to answer the distillation of corn-wash, that being a material too heavy for its operation, and the machinery did not succeed according to expectation. It was used, with success, in the distillery of Mr. Martin, at Sligo, for the distillation of low-wines, being found to answer the purpose, as it produced spirits of excellent quality.

This still consists of a boiler with a man-hole and a proper discharge-cock, and a glass-tube to regulate the material in the still. An upright cylinder having a vast number of plates is constructed so as to allow the vapour and liquid to pass alternately. This cylinder is surrounded by a dome terminating in a curved arm, which leads into an intermediate charger, in which are a set of plates calculated for condensing the vapour; these pipes are surrounded by the wash, or low-wines contained in the intermediate charger. At the bottom of these pipes is a small tube connected with each, so as to allow the condensed vapour to pass into the still at the pleasure of the distiller. Above the dome of the cylinder, is a charger connected with the intermediate one for a supply of the material to be distilled; and from the intermediate charger, the vapour, passing through a condenser, descends through a pipe into the worm in the tub, where it is finally condensed. There are two charging-pipes, one acting immediately at the top of the cylinder, the other at some distance lower; the lower one is so arranged by a regulator on the cock as to enable the distiller to ascertain exactly the number of gallons that pass to the cylinder in any specified time, while the upper one, by a similar regulator, enables the distiller to obtain, at pleasure, spirits of any strength from proof to alcohol in one operation from the weakest material. A tolerably correct notion of this still may be formed from an inspection of that of Derosne, which it resembles in appearance. One of Morrissy's stills was worked for some time near Cashel, but failed, as was supposed, in consequence of the imperfect manner in which the pipes and joints were constructed by the copper-smith. One very unpleasant occurrence respecting this still was, that when a strong fire was applied to it, there was such a frightful noise, as to cause a

stranger to run away through fear of an explosion. This might have been obviated by opening the small cock, which led from the first section into the still, and by lessening the intensity of the heat.

Mr. Joseph Shee, of Cork, obtained a patent for a still, or rather a continuation of four stills, having four chargers and four worms in one tub, and four receivers; the various vessels forming its component parts with their uses are of the same kind as those for the common still. While the first still is at work with, say, 900 gallons of wash, the first charger is re-charged with an equal quantity; the vapour generated in the first still rises in the head and passes through the close pipes from still to still until it returns to the first charger, through which it passes into the first worm, where it is condensed, and runs into a receiver, from whence it is pumped up into a second charger; so that when the distillation of the 900 gallons in the first still is completed, the low-wines produced from it, about 350 gallons, are pumped into the second charger, and run into the second still, from whence the vapour is made to pass directly into its own or second worm, and from thence conveyed into the second receiver, and the operation is continued from still to still until the entire process is completed. The whole operation in the stills may be thus briefly stated:—

The first still under which only fire is applied, (the others being heated from it are, properly speaking, steam-stills,) being charged with 900 gallons of wash, the first charger is re-filled with 900 more.

In No. 1 still, 900 gallons are distilling, and will produce 350 gallons of low-wines.

In No. 2 still, 350 gallons of low-wines are distilling, and will produce 140 gallons of feints.

In No. 3 still, 140 gallons of feints are distilling, and will produce 100 gallons of strong feints.

In No. 4 still, 100 gallons of feints are distilling, and will produce 80 gallons of strong spirits.

Hence, as Mr. Shee observes, it is evident that a single fire under the first still operates at once upon five chargers with only the same expenditure of fuel, time, and labour, that, in the ordinary mode, is required for a single charger.

For further particulars respecting this ingenious contrivance, the reader is referred to Mr. Shee's own description of the machinery and its advantages, as possessing a large share of merit and high interest.

A still of an ingenious nature was constructed by Mr. Thomas Haig, of Leith, in 1829. It consisted of the body of the ordinary

still, with a very high head and swan-like neck, continued by a pipe through which the steam traversed a chamber containing 300 upright tubes, each $1\frac{1}{2}$ inches in diameter. Through these, the steam ascended (after undergoing a partial condensation,) into another upright pipe, having a semicircular top bending downwards into a horizontal pipe, through which the vapour again ascended into another chamber containing 1500 upright tubes, each $\frac{1}{2}$ inch in diameter, through which the steam evolved, and finally passed into the worm and the last stage of refrigeration. From the two chambers were tubes, which conveyed back to the still such portions of the liquor as would not ascend. The spirits produced by this mode of distillation were of excellent quality, and the feints were much purer, having less of the essential oil in them than those produced in the ordinary way. What has been the final success of this invention I have not been informed.

The patent apparatus of Mr. Stein is deserving of notice as effecting distillation by means of four elliptical stills, the object being to economise in the expense of fuel, rather than to obtain spirits of any required strength at one operation. "The heat absorbed in the conversion of a given weight of water into steam, exceeds greatly that which is required to raise its temperature to the boiling point, one pound of water converted into steam raising 6lbs. of water to the point of ebullition. The heat thus evolved varies in different liquids, and is in all considerable; and as distillation is ordinarily conducted, this heat is not merely lost, but occasions a considerable additional expense, from the great quantity of water required to reduce the vapour to the liquid state." To obviate these two sources of loss, Mr. Stein contrived his apparatus so that one portion of liquid formed into vapour shall be reduced to the liquid form by another portion of the liquid which is evaporated by the heat given out in the condensation. But to convert a fluid into steam, not only a certain quantity of heat is required, but the heat must be of a certain intensity; thus although a pound of steam at 212° would raise 6lbs. of water to the boiling point, it would convert no portion of it into steam, as the moment the water had acquired the heat of the steam it would receive no further portion of heat from it; but if the steam is formed under a pressure exceeding that of the atmosphere, its heat as indicated by the thermometer is increased, and it will consequently continue to impart heat to a liquid which has attained the boiling point under a less pressure than the steam employed to heat it. Upon the combination of these two principles, Mr. Stein's apparatus has been con-

structed." For further particulars his own desciption may be consulted.

Mr. Æneas Coffey, of Dublin, invented a still, for which, in 1832, he obtained a patent. The principle on which his apparatus has been constructed, is, on the points of temperature at which water and alcohol boil, 212° for the former, and 173° for the latter; mixtures of these boil at intermediate heats in proportion to their quantities. When the steam of water is made to pass through a liquid composed of water and alcohol, it will be condensed until it has raised the mixture to its own boiling point, after which the alcohol evaporates by the further application of steam. When a mixture of steam and alcoholic vapour is made to pass through a liquid composed of water and alcohol, similar effects are produced, for after the mixture has arrived at its boiling point, the vapour passing through loses some of its watery parts, and an equivalent quantity of alcohol is volatilized; and the mixed vapour, after pasing through the liquid, carries off a larger portion of alcohol than it brought with it. When a mixture of steam and alcoholic vapour passes into a condenser, or worm, the vapour first condensed will contain more than a mean proportion of steam or watery vapour; and, if the size of the condenser, or worm, be not sufficient, or the temperature of the bath in which it is immersed be too high to condense all the vapour, that portion of it which escapes uncondensed will contain more alcohol than the portion condensed.

Keeping these observations in view, it will be easy to understand the nature and advantages of Mr. Coffey's apparatus.

The body of the apparatus consists of an oblong vessel, BB′, and and two columns erected thereon, C, D, E, F, and G, H, I, K.

The first of these columns is called the *analyzer*, the second the *rectifier*.

The whole is made of wood, lined with copper, and the wood being five or six inches thick, little or no heat is lost by radiation.

The oblong vessel has a copper plate or diaphragm, *c d*, across the middle of it, which divides it into two chambers, B B′. This diaphragm is perforated by a great number of small holes, for the passage of the vapour upwards during the process, and it is also furnished with several valves which open upwards as shewn at *e*, *e*, *e*, *e*, whenever the vapour is in such quantity as not to find a free passage through the perforations.

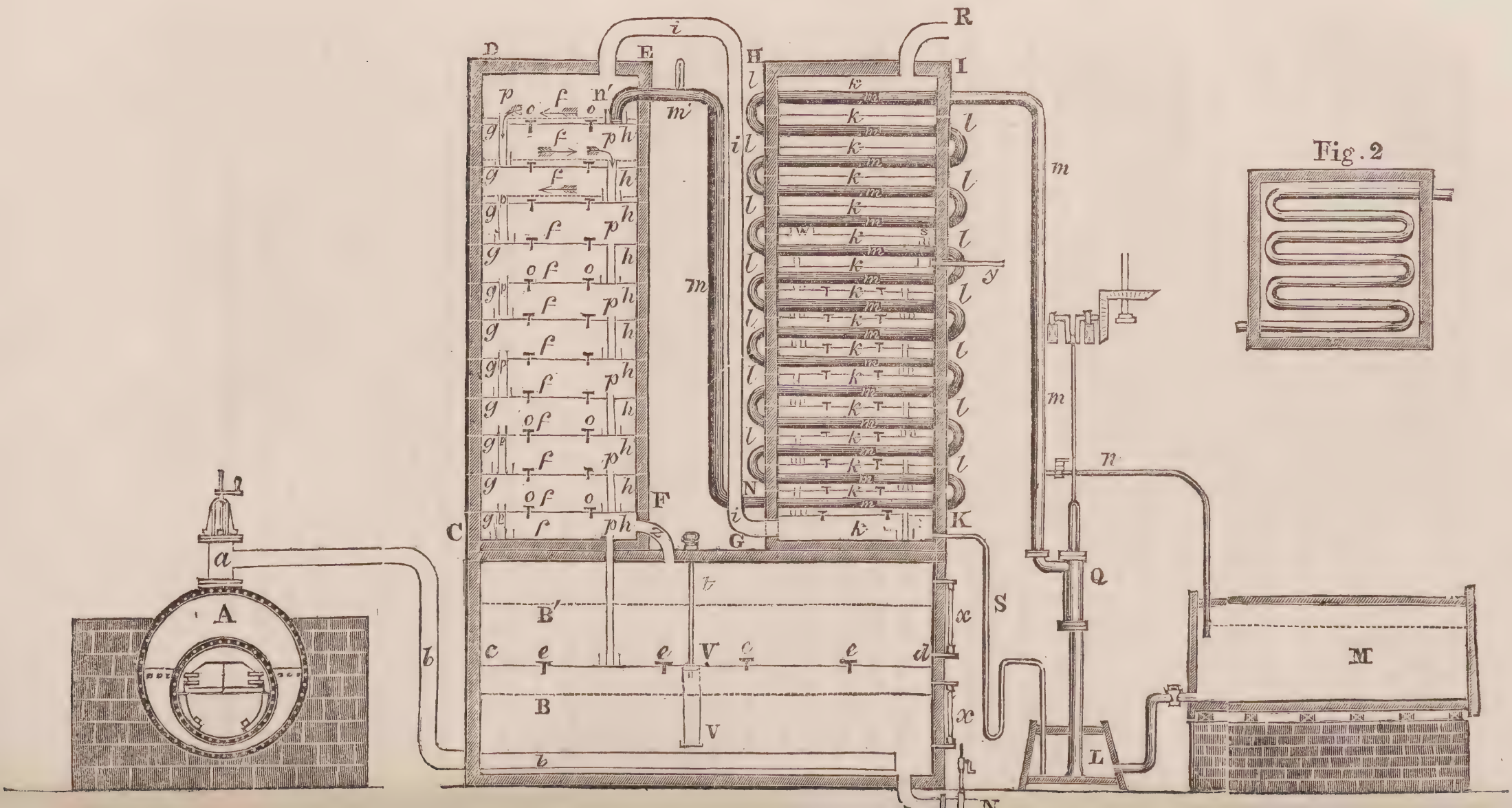


Fig. 2

A pipe V, V, descends from this diaphragm nearly to the bottom of the lower chamber B, into a pan forming a steam trap, and there is a valve on the top of this pipe which can be opened or shut at pleasure, by means of a rod *t*, passing through a stuffing box on the top of the vessel. Glass tubes at *x*, *x*, shew at all times the level of the liquor in the chambers BB'.

The column C, D, E, F, which is called the *analyzer*, consists of twelve chambers, *f f f f f*, formed by the interposition of eleven copper diaphragms *gh gh*, &c., similar to the large diaphragm *c*, *d*, that is to say, these eleven diaphragms are perforated with very numerous holes, and furnished with valves opening upwards. To each of them is also attached a dropping pipe, *p p p*, &c., by which the liquor is allowed to flow from plate to plate; the upper end of each of those pipes projects an inch or two above the plate in which it is inserted, so as to retain at all times, during the distillation, a stratum of wash of that depth on each diaphragm; the lower end of each pipe dips a little way into a shallow pan lying on the diaphragm underneath, forming thus a steam trap by which the escape of vapour through the pipe is prevented. The pipes are inserted at alternate ends of the diaphragm as shewn in the figure.

The column G, H, I, K, is divided, in a similar manner to that just described, into chambers by interposed copper plates or diaphragms. There are 15 chambers in this column, the lowermost ten *k k k* &c., constitute the *rectifier*, and its diaphragms are perforated and furnished with valves and dropping pipes, precisely similar to those of the *analyzer*.

The uppermost five of these frames formed the *finished spirit condenser*, and are separated from the other ten by a copper sheet, or diaphragm, without small perforations, but having a large opening at W for the passage of the spirituous vapour, and a dropping pipe at S. There is a neck about the opening W, rising an inch or so above the surface of the diaphragm, which prevents the return of any finished spirit by that opening.

Under the dropping pipe S, is a pan much deeper than those of the other dropping pipes, and from this pan a branch pipe *y* passes out of the apparatus, and carries the condensed, but still very hot spirits, to a worm, or other refrigerator, wherein they are cooled.

The chambers *k' k' k' k'* of this finished spirit condenser, are formed of plain unperforated diaphragms of copper, with alternate openings at the ends, large enough both for the passage of the vapour upwards, and of the condensed spirit downwards; the use of these diaphragms being merely to cause the vapour to pass along the pipes *m m* in a zig

zag direction, and to be thus more perfectly exposed to their condensing surface.

In every chamber, both of the finished spirit condenser and of the rectifier, there is a set of zig-zag pipes, placed as shewn in the plan, figure 2, each set of these pipes is connected with the others by the bends *l l l l*, and they thus form one continued pipe *m m*, leading from the wash pump Q to the bottom of the rectifier, whence it finally passes out at N, and rising up, enters the top chamber of the analyzer where it discharges itself at *n'*.

M is the wash charger, L a smaller wash vessel connected with it and with the wash pump, this vessel is called the wash reservoir, and is not, strictly speaking, a necessary part of the apparatus ; its use is to retain a sufficient reserve of wash, to prevent the apparatus being idle during the delay, which the Excise regulations render unavoidable, between the emptying of the wash charger, and the refilling it from a new back.

The pump Q is worked continuously during the distillation, so as to supply the apparatus with a regular stream of wash. It is so constructed, as to be capable of furnishing somewhat more than is necessary, and there is a pipe *n* with a cock on it, by which part of what is pumped up may be allowed to run back, and the supply sent into the apparatus regulated.

A is a steam boiler having nothing peculiar in its construction, the steam from it is conveyed into the bottom of the spent wash receiver by the pipe *b*, which, after entering the receiver, branches into a number of smaller pipes perforated with holes, by which the steam is dispersed through every part of the wash in which they are immersed. These perforated pipes are not shewn in the drawing.

Mode of action—When commencing an operation, the wash-pump is first set in motion to charge all the zig-zag pipes *m m m*, until the the wash passes over into the analyzers at *n'*. The pump is then stopped, and the steam let into the bottom of the apparatus by the pipe *b b*. The steam passes up through the chambers B B', and by the pipe *z* into the analyzers, from whence it descends through *i i* to the bottom of the rectifier at N. It then rises through the chambers *k k*, enveloping the zig-zag pipes, and rapidly heating the wash contained in them.

When the attendant perceives, by feeling the bends *l l l*, that the wash has been heated in several layers of these pipes, perhaps eight or ten layers, (but the number is not of much moment,) he again sets the pump to work, and the wash now boiling hot, or nearly so, (and

always in rapid motion) flows from the pipe *m* at *n'*, and passes down from chamber to chamber through the dropping pipes, in the direction shewn by the arrows in a few of the upper chambers. It may be here observed, that no portion of the wash passes through the small holes perforated in the diaphragms which separate the chambers. These holes are regulated both in number and size, so as to be not more than sufficient to afford passage to the vapour upwards under some pressure. The holes, therefore, afford no outlet for the liquor, which can only find its way down in the ziz-zag course indicated by the arrows. It is, therefore, obvious, that the wash as it passes down is spread into strata, as many times as there are diaphragms, and is thus exposed to the most searching action of the steam constantly blowing up through it. As it descends from chamber to chamber, its alcohol is abstracted by the steam passing through it, agreeably to the 3d and 4th preliminary principles we have laid down, and by the time the wash has reached the large chamber B, it is in the ordinary course of the operation, completely deprived of its alcohol.

The wash, as it descends from the analyzer, accumulates in the upper large chamber B', until that chamber becomes nearly filled, which, when the attendant perceives to be the case, by the inspection of the glass tube, he opens the valve of the pipe V, and discharges the contents of B, into B ; then shutting the valve, the wash from the analyzer again accumulates in B', and, when it is a second time nearly full, the contents of the lower chamber B are discharged from the apparatus altogether, through the cock N, and the charge in B' let down into B, by opening the valve as before, and thus the process goes on so long as there is any wash to supply the pump. When all the wash is gone, a quantity of water is let into the reservoir L, and pumped through the pipes *m m*, to finish the process and obtain the last portions of alcohol. This winding up of the operation by sending water through the pipes, takes place on the distillation of every back of wash, in consequence of an Excise regulation, which requires the distiller to keep the produce of each back separate from that of any other. Were it not for this regulation the distillation would go on uninterruptedly, so long as there was any wash in stock; the addition of water for winding up would be necessary but once during the distilling period, and the manufacturer would save much time and fuel at present wasted by these interruptions.

It has been already said, that in the ordinary course of the operation, the wash is stripped of all its alcohol by the time it has reached the bottom of the analyzer, but, as a precautionary measure, the chambers B' B have been superadded, in each of which the spent wash is

exposed for about half an hour to the action of the steam blowing through it.

There is a small apparatus (not shewn in the engraving) by which a portion of the steam in the chamber B′ is condensed, cooled, and made to flow constantly through a sample jar, in which is an hydrometer, or, what is better, two glass bubbles, one of the specific gravity 1000, the other 998. The attendant knows all is right when these bubbles, or even the lightest of them, floats in the sample. And thus, the chamber B may be emptied without any risk of loss.

The course of the wash being understood, that of the steam will require very little description.

The steam, as it rises, is first blown through the charges of spent wash in the chambers B′ B, thence it passes up through the layers of wash on the eleven diaphragms of the analyzer. In its passage it abstracts from these layers of wash their alcohol, depositing in its place an equivalent quantity of water. After traversing the whole of the analyzer, the vapour, now containing much alcohol, passes by the pipe *i i*, into the bottom of the rectifier, and, as it ascends, it envelopes the pipes *m m*, heating the wash, and, at the same time, parting with its more watery portion, which is condensed, and falls, in a boiling state, on the several diaphragms of the rectifier. By the time the vapour reaches the passage W, in the bottom of the finished spirit-condenser, it is nearly pure alcohol, and, as it is condensed by the wash in the pipes, and falls on the diaphragm, it is conveyed away by the pipe *y* to a refrigerator. At the top of the spirit condenser is a large pipe, R, which serves as a vent for the incondensable gas which is disengaged in the process, and this pipe also communicates with the refrigerator, so that, should vapour at any time be sufficient to pass out of the apparatus, no loss is sustained beyond the waste of fuel caused by condensing that vapour by the water of the refrigerator instead of the waste of the condenser.

The liquor condensed on the several diaphragms of the rectifier, after being blown through by the vapour passing up from plate to plate, descends to the bottom in the same manner as the wash descends from chamber to chamber in the analyzer; but this condensed liquor still contains a portion of alcohol, and it is conveyed by the pipe S to the pump Q, by which it is pumped up with the wash to be again distilled.

A thermometer at *m′* shews the attendant the temperature of the wash as it issues from the pipe *m m*, into the analyzer, which is the only guide he requires for managing the operation; for, when the temperature is what it should be, nothing can go wrong in the work.

Whenever the thermometer indicates too high a temperature, more wash should be let into the apparatus, and *vice versa ;* the quantity being regulated by the cock on the pipe *n*. It would seem, however, that very little nicety is requisite on this point. The attendant finds by experience that the fluctuation of a few degrees above or below the proper heat is of little consequence ; and, we observed, that he very seldom found it necessary to alter the supply of wash.

The water for supplying the boiler passes through a long coil of pipe immersed in the boiling, hot, spent wash, by which means it is raised to a high temperature before it reaches the boiler. It will be seen that the vapour passing through this apparatus is all condensed by the wash, not water; and, therefore, no heat is wasted, as in the common process. The consequence of this is, that about three-fourths of the fuel used with the common stills is saved, a matter of very important consideration, in a national point of view.

According to the common process, it requires 12lbs. of coals to distil a gallon of proof spirits,* of which, as we have said, 9lbs. are saved by the new system; and, assuming the whole quantity of spirits distilled in the empire to be 36,000,000 gallons, which (colonies included) we believe is not over the mark, the saving of fuel arising from the new methods of distilling, which, no doubt, will be soon universally adopted, will amount to 140,000 tons of coal per annum.†

The apparatus of Mr. Coffey, erected at Inverkeithing, in Scotland, distils 2,000 gallons of wash per hour, and that at Bonnington, near Leith, upwards of 3000 gallons per hour. The still erected for Messrs. Thomas and George Smith, at White-chapel, has been now upwards of a year at work, making, I understand, 60,000 gallons of proof spirits in the period of five days, or obout 12,000 gallons daily ; and from the purity of the spirits, and the immense saving of fuel, labour, &c., is giving the highest satisfaction.

The Messrs. Currie at Bromley, are working on the same extensive scale ; but they are using two of Mr. Coffey's stills. The one which he has lately erected for Sir Felix Booth, Bart., at Brentford, bids fair to rival all the others. There are no brewing coppers in this distillery, that process being entirely carried on with a peculiar apparatus, which Mr. Coffey has constructed for Sir. F. Booth for that purpose ; and, instead of the numerous and wasteful fires necessary

* When the coals are of the best quality, the furnaces scientifically constructed, and when strong wash is used, a gallon of spirits can be distilled with much less than 12 lbs. of coals ; but we have good reason to believe the average consumption is not less than that.

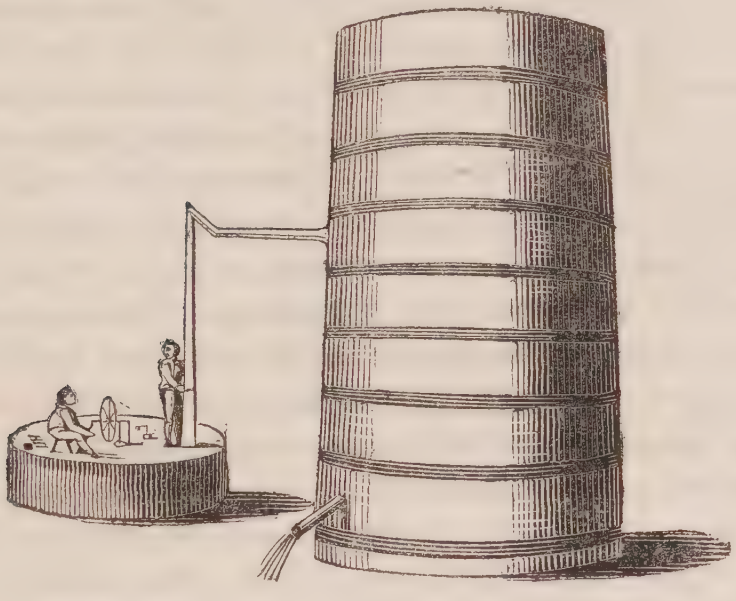
† The author is indebted to Thomson's Records of General Science for the foregoing description of this apparatus.

in the common distilleries, the whole of the process of brewing and distilling in this very extensive work is performed by the economical fires of two steam-engine boilers.

The still worked by Mr. Busby, in Dublin, is a beautiful specimen of this apparatus, and is giving great satisfaction by the production of a very superior spirit.

The Stills generally in use in Ireland, under the present law, are of the common kind, consisting of a very large dome-shaped copper, similar to the coppers used in breweries, with a worm and worm-tub of great magnitude. The Stills, however, are so familiar that a more minute description would be unnecessary.

To enable the reader to form a correct idea of the figure of the Still formerly in use, a representation is subjoined, with a delineation of a person working the machinery, and another standing by the head to prevent its getting foul.



While exertions were making to lessen the labour and bring to perfection the process of distillation, plans were, at the same time, devised to secure the revenue on the quantity of spirits actually produced. One of the first attempts to effect this object, was made at Carrickfergus, in 1821, by Captain Thomas Pottinger, by means of machinery placed in enclosed vessels. The principles on which his experiments were conducted had a two-fold object. First, to keep the produce out of the reach of the distiller during the process; and, at the same time, allow him to ascertain the strength, heat, and colour of the spirits while running. Secondly,

to secure the casks so as to prevent any defalcation in the contents, or diminution of the charge. To secure these objects, a glass jar was stationed at the end of the worm, in which was placed an hydrometer, and to the outside was affixed a scale to indicate the strength, the heat being at the same time determined by an adjoining thermometer. To prevent all access to the fluid, or run from the worm, a glass cylinder was placed overhead, which, it was impossible to remove, without breaking. To effect the second object, the different receivers were covered by iron plates, bolted and screwed within. Each was furnished with a ball-cock to prevent its being filled above a certain height, in which was placed a very large copper ball attached to a pump to regulate the strength of the liquor at the time of pumping. These balls were in reality hydrometers, which, when the liquor became stronger than the usual standard, sank to the bottom, and, by that means, opened an air-valve which communicated with the pump, and prevented it from working. To these contrivances, a machine was super-added within the spirit receiver, by which the spirits were measured, as they came from the worm, and the quantity registered by an index. The whole was so secured as to be inaccessible to the distiller, or the visiting officers.

At the suggestion of Mr. Coffey, (inventor of the still,) who was appointed by the Commissioners to superintend Captain Pottinger's operations, fresh experiments were made, with a new and improved apparatus, on a still containing 500 gallons. The improvements of Mr. Coffey were, that no wash could be put into the still without being measured and recorded. For this purpose, a close vessel was employed, denominated " the wash measuring gauger," having two stop-cocks, or rather a double-cock, so constructed that the act of opening the one for filling the charger, shut the other for employing it; while, at the same time, the distiller was enabled to fill his charger and convey the contents into the still. This double cock was enclosed in an iron box containing a few wheels, by the revolution of which, the quantity of wash put into the still was marked on an index visible through small glass apertures. In this measuring charger, an overfall pipe was fixed to shew when it was full, which contained a valve to prevent any liquid being forced up through it. A similar charger was constructed for conveying the low-wines into the still, on the breast of which was a close copper case, in which all the communicating pipes terminated. This case contained a valve opening and shutting at pleasure. The discharge-cock was so constructed as to let every thing pass freely out, but nothing into the still. The air, or safety-valve, was fixed on the lying arm, in such a

way that no fluid could be conveyed through it into the still. All the receivers were close vessels communicating with the still by means of a force-pump through the measuring charger already described. In the same manner the spirits' receiver was connected with a vessel termed " the spirits' measurer," through which all spirits were filled and emptied by means of a double-cock, similar to that attached to the wash charger, and by this means the number of gallons taken out of the receiver was accurately recorded. In the spirit measurer was placed a small, close vessel of thin copper, so connected with the filling and emptying-cocks, that at each time of drawing off, about one-eightieth of a gallon was retained. From this sample vessel, as it may be termed, a pipe, terminated by a cock, proceeded through the bottom of the measurer into a metal box secured by a lock. This contrivance enabled the officers at any stated period, to ascertain the average strength at which the distiller had drawn off his spirits, and to make a surcharge, if such were deemed necessary.

Experiments were lately made at the Excise Distillery, St. Catherine's Dock, London, by Captain Rudkin, to try a *safe* and *meter* at the worm-end, in order to do away with the usual survey on the process, and that of the subordinate officers altogether. These proving unsuccessful, he obtained money from the Chancellor of the Exchequer, through Dr. Birkbeck, for further experiments; and the Hope Brewery, a small concern in Brown-street, Spitalfields, was fitted up with a still of 600 gallons for the purpose, and a *safe* and *meter* of another description were attached to it. A measurer holding about 20 gallons was fixed in a safe three feet in height by two feet in breadth; the strength of the run from the still was determined by a hydrostatic balance which acted in conjunction with the measurer. It was worked for four or five periods, and made 800 gallons of spirits; but the result not having yet been made public, no conclusion can be drawn respecting the use or value of the machinery. No apparatus, however, can determine with any degree of accuracy, what the mental powers and vigilance of men are enabled to ascertain by the present system of survey, the utility of which has been fully confirmed by the test of time and the ordeal of public opinion.

The process of distillation is generally conducted in the following manner :—

The keive or vessel in which the grain is mashed, is thoroughly cleansed by washing and liming, while the underback is prepared in the same way. Lime, when moderately used, has been found by experience to be the best sweetener. The lime is allowed to remain

on the vessels in a wet state, for about two hours before the scalding water is poured in, and afterwards suffered to stand until it is of that heat that a man can go in and wash out the vessels. This process must be done so as to leave no remains of any acid matters whatever, as the least portion thereof would prove highly injurious ; and here it may be generally observed, that, without a constant attention to cleanliness, nothing can be effected in any stage of the work. Some distillers with every twenty pounds of lime, mix five pounds of potash, and keep it in a stirring state until an effervescence takes place. This solution is made thin like wash, and applied round the whole vessel, after which it is washed off in the same order in which it was put on. The scalding of the vessels is more particularly to be attended to in April, May, June, and July ; but when a sufficient quantity of good water cannot be readily procured, the solution of lime and potash is indispensable. Some use soda with the lime in place of potash, say in a proportion of two ounces of soda to every four pounds of lime ; but on account of the superior strength of the potash, it is preferred.

The malt, barley, and oats, or whatever sort of grain the distiller means to use, is ground to a proper consistence and placed in bags near the keive, where it is kept until a sufficiency of water is let into the keive from the coppers, and then the bags are emptied in gradually. The quantity of the grain depends on what kind is to be used; if a mixture be employed, it must be in the proportion of one-seventh of malt to equal parts of oats and barley; this being the general ratio in a distillery working from what is called raw or mixed grain; some consider one-fifth malt, two-fifths bere or barley, and two-fifths of oats or wheat, as the best proportion; others one-seventh malt, one-fifth oats, one-half wheat, and the remainder bere or barley. Wheat is considered a dangerous material to use in a large proportion, in consequence of the adhesive quality of the wort. Although these are the general proportions of grain used, yet the distiller is commonly guided by the state of the markets. In all cases the quantity of liquor employed for the first or break-up mash for each barrel of twelve stones of ground grain, varies from forty to fifty-four Irish gallons at the discretion of the distiller: twenty gallons is the quantity generally used in the second mashing, and fifty in the third. It may sometimes happen that he is deficient in some of the particular kinds of grain, in which case he must supply the difference with whatever sort he has most of on hands. All the grain is not put in at the same time, the malt being commonly put in first, the oats next, and the bere, or barley, last. While the grain is being removed into the keive, the

mixing either by machinery or hand rakes is going on. The temperature of the water is generally from about 144° to 146°, or from 140° to 150°, where water is only employed, which is the case at commencing each period; but the next day when the small worts are used, the heats are from 146° to 148° and 150° at finishing. These heats are regulated by the judgment and experience of the distiller, who manages them according to the description of grain which he uses, and the state in which it may be in, whether new from the mill or a long time ground. In the latter case, and should the grain be only a week or ten days ground, the heats already specified would be sufficient; but if just come from the mill, the heat will of course be lowered a degree or two, say to 140°. Some distillers pay little attention to the state of the grain, and they do not alter the range of the temperatures, but this matter is deserving of due regard, as it must have its influence on the liquor in the keive. The machinery, or rakes continue plying until all the grain is thoroughly mixed, when the remainder of the liquor intended for the mash is let in from the copper, by some in two parts, and by others in three, at a temperature of from 198° to 212°, so as to raise the keive from 148° as the case may be, to 152° at finishing. Every brewing consists of three mashings, one for strong worts, another for weaker; the last is sent to the coppers as small worts to assist in the next brewing. But the number may be said not to be completed until all the extract is taken from the keive, which may extend to a fourth mashing.

As to the quantity of worts drawn off the keive, the whole of the first and second mashing is let into the underback. Caution is to be observed in draining the keive so as to let as little of the gross mucilage in with the worts as possible. The liquor of each of the two mashings is successively pumped into the coolers, if the keive is not large enough to contain the whole worts intended for the back, where it is allowed to remain until it is at a heat of from 66° to 70° or 74°. It is then permitted to run into the back where barm is applied. The gravity at which the worts are intended to be collected or set, is regulated either in the run from the keive, on the coolers, in a wort receiver, or in the back itself, but commonly in either of the two latter vessels. The proportion of yeast is from one to two gallons per cent., this, however, like other matters, must a good deal depend on the quality of the article, as well as on the experience and judgment of the distiller. If working at 50° of gravity, from fifteen to twenty gallons of barm are usually given to one thousand gallons of worts. Where much barm is used, the liquor may be run into the back at a

lower heat, and when little is added the heat is required to be higher; but this depends much on the season of the year: caution, however, should be used in applying the quantity of barm, as too much would injure the flavour of the spirit.

The fermentation commences generally in the course of three or four hours, and if the working appears dull, slow, or stubborn, more barm is introduced; *bub* is sometimes added with the barm, and sometimes not, until the worts have been undergoing fermentation for twenty-four hours. Bub is made from ground barley and strong worts, and sometimes from strong small worts from the coolers, properly blended and boiled with some hops, in the proportion of one pound to a barrel of worts. The meal of peas, beans, and oats is frequently used in making this article, owing to their fermentive properties. This mixture is let off into a cooler where it remains till it arrives at a temperature of 74°, after which it is allowed to ferment by the addition of some barm in a tun from which it is removed, when in a high state of fermentation, into a back as already stated. If a quantity of bub is not thus used, a greater portion of barm must be applied; the quantity of bub depends on the extent of the worts set, and is added so as to enable the distiller to take advantage of the 5 per cent. increase allowed by law. The finer the grain is ground, the better for getting the whole of the extract; but the finer, the greater should be the precaution observed in working, because it might *set* as distillers say, or become so thick that the saccharine matter would be blocked up by an extra heat: hence distillers always take care to manage the warmth of the liquor so as to prevent accidents of this nature, by not allowing the heat to run too high, or too low. The temperature of the water for mashing malt only, is from 150° at commencing, to 165° or 170° at finishing; the heat of the first mash being 150°, and gradually raised in the course of the mashing by the addition of more liquor from the coppers until the process is concluded. Malt bears a higher heat than either raw or mixed grain. For beer or ale brewers use higher heats on account of the malt they use being more highly kiln-dried and prepared for the purpose; for distillation it is not necessary to have malt so highly dried. For pale beer, brewers use nearly the same description of malt as distillers. A back may be considered as fit to go to the still when it is fully attenuated or will ferment no more; at this stage it possesses a vinous taste, and if properly fermented, shows no gravity, and is then called *wash*, it being during the process of fermentation indiscriminately called *worts* and *wash*.

Distillers and brewers, though familiar with the change which worts undergo in the process of fermentation, are still ignorant of the various anomalies which occur in the process. It is well known that although two backs have been charged with an equal quantity of worts from the same mashing of the same heat, supplied with equal portions of the same barm and treated in the same manner, yet when the fermentation ceased, one was found to be attenuated to the consistency of water, while the other shewed a gravity of two degrees. This could not be owing to the preparation or previous disposition of the fermented liquor, nor could it be attributed to the yeast. Could it then arise from the admission or exclusion of the external air, heat, or cold, or to any other accidental circumstance? Some might say it was to the want of due proportions of oxygen, hydrogen, and carbonic gas, others to a different cause; but the results have proved that the true reason cannot be satisfactorily given. Backs have been known to go on rapidly in fermentation till near the conclusion, when on a sudden they fell off and left a considerable quantity unattenuated—a consequence which the most experienced could not explain. It has been asserted on respectable authority and confirmed by experience, that light has considerable effect on fermentation, since of two backs, one exposed to the light and the other excluded from it, the former was uniformly found more productive than the latter; to such apparently trifling incidents are many of those irregularities that daily occur to be attributed.

To render fermentation perfect and advantageous, is a very difficult undertaking which requires great experience and close attention, and on the success of this process in conjunction with the skill observed in mashing, the value, flavour, and produce of the spirits depend. Worts of a high gravity are more difficult to ferment than worts of a less density, and there are degrees of inspissation which prevent a tendency to fermentation, besides a fervid heat is the bane of all vinous fermentation, whereas a tepid one, or imperceptible warmth, is its great promoter. A good deal also depends on the state of the weather; hence the distillers begin to work about the end of October, and leave off in May, the colder months being found most congenial to brewing and fermentation.

No fermentation will take place at the freezing point, nor at the temperature of 90°, so that at the intermediate degrees according to quantity, gravity, and other circumstances, are the worts to be sent to the tuns—70° is the highest rage of heat, though much higher has been used in cold situations. Large masses of worts are found, when

fermented together, more productive than small portions, and not so liable to be affected by change of weather ; neither is the same portion of spirits to be always got from the same materials. Raw corn worts are more likely to run into the acetous fermentation than malt worts, and the liquor made from them is more susceptible of receiving a communication of flavour in rectification than that made wholly from malt.

Here it may be satisfactory to define the nature and properties of fermentation, so far as regards brewing and distillation.

Chemists divide fermentation into four different heads, the *saccharine*, the *vinous*, the *acetous*, and the *putrefactive*. Starch is the only substance liable to the saccharine fermentation ; for, when it is kept moist for some time, it generates about half its weight of sugar. The vinous fermentation requires sugar, water, and yeast, under a certain temperature.

The real theory of the process is accounted for by the known fact, that the sugar which disappears is almost equal to the united weights of the alcohol and carbonic acid generated. The saccharine juices of fruits do not require the addition of yeast, since they contain, within themselves, some principles like it, that cause the fermentive process :—thus the juice of the grape, the apple, &c., ferments spontaneously, but not without the free admission of atmospheric air.

When grains, (as oats, malt, bere, &c.,) are intended to be converted into fermented liquors, it is necessary to have a portion of them malted in order the more readily to cause the farinaceous parts to be converted into the saccharine substance.

It was formerly thought essential to subject the entire quantity intended to be brewed to this process ; but experience has proved that a mixture of raw with malted grain will answer that purpose, and convert the whole mass into a saccharine fluid. The farinaceous part of grain merely mixed with water, passes into a state of acidity, but when combined with a portion of saccharine matter, it undergoes the vinous fermentation. Care must be taken that the quantity of water be not too great, as in that case the acetous fermentation would take place, and if too little water be employed, the process will be dull and doubtful. In the vinous stage, the heat is moderate, seldom exceeding that of the human body ; in the acetous it is much higher, and in the putrefactive it is still greater—even so high that putrefying substances heaped together have been sometimes known to kindle into flame.

All vegetable substances which undergo spontaneous fermentation, are more liable to become acetous, than those fermented by yeast. This may be accounted for by the consideration of the mucilaginous and extractive matter not being properly blended by the active principle of barm—hence, were it practicable, fermenting without the aid of this important and essential material, would be attended not only with great risk but with certain loss.

On a trial instituted by the Crown against a distiller for adding yeast to worts before being collected in the fermenting wash-back, by which he was subject to a penalty of £200, it was endeavoured to be proved, that in samples which had been taken by two inspecting officers, and which when distilled, produced spirits, yeast had not been employed, and that the result was the effect of spontaneous fermentation, though the samples so taken showed from the commencement, a progress of attenuation from 50° to 4° in a period of three days. Evidence on the part of the distiller alleged, that spontaneous fermentation commences in from three to five days; one of the witnesses, a practical distiller, stated, that he set two gallons of worts at a gravity of from 46° to 47°, and a temperature of from 70° to 74°, and that they came down in about four days to 5° which was the lowest of two or three experiments of this nature, the average being from 6° to 8°. Another witness tried how fermentation would act on two gallons of pure malt wort, without barm, bub, or any fermentable matter, and he found the operation to commence in about twenty-four hours after, and to continue attenuating for 10 or 12 days, producing a good spirit. He afterwards tried four gallons of worts from mixed grain at a gravity of 78° 5, at a temperature of 79°, and procured about half-a-pint of spirits, but the process of attenunation stopped at 14lbs.—Had this quantity been regularly fermented and distilled, it is considered that it should have yielded about two quarts of spirits, evidently shewing the defective nature of spontaneous fermentation. Another experiment was tried on two gallons of worts made from a mixture of barley, malt, oatmeal, and wheat, and set at a gravity of 51° and 70° temperature; these were above five days attenuating, stopped at a gravity of 8°. 5, and yielded about a naggin of spirits, besides a considerable portion of feints.

In opposition to these testimonies, it was urged on the part of the Crown, by the evidence of two Chemists and a Revenue Inspecting Officer, in support of the correctness of the samples, that no spirits whatever could be produced from worts by spontaneous fermentation, as without barm, or the addition of some other fermentive matter,

worts would run into the acetous fermentation, and instead of alcohol produce acetic acid. One of the most intelligent of those Chemists, stated, that after seventy-four experiments, he found that in no instance, worts without the addition of fermentive matter, have undergone the vinous fermentation, and that worts that have been submitted to spontaneous fermentation, produced nothing but vinegar, as without the addition of some fermentative material, such as yeast, no spirits could be obtained. This is confirmed by the experiments of Fourcroy and Vanquelin. Some experimentalists have asserted, that fermentation may take place without barm in worts impregnated with fixed air; and that the operation is quicker or slower in proportion to the quantity of air which the worts have imbibed—perhaps this is caused by the fluid containing an extraordinary quantity of fixed air, which, by some disposition of the air itself to assume its elastic state, may produce the fermentive process. The briskness, pungency, and pleasing acidulous taste of all fermented liquors, depend on the quantity of fixed air which they contain. Should they become flat or vapid, they may be brought to their original vigour by a restoration of the lost ærial acid, which may be effected by various practical operations, as shewn by the experiments of Dr. Henry, an eminent Chemist, of Manchester; but this has never been resorted to by either distillers or brewers. It is absurd to speak of fermenting in large concerns without barm, because time cannot be spared, and even were it practicable, the waste of property would be incalculable. Experience has proved that fixed air is one of the great principles of fermentation, it has, therefore, become the practice to ferment in close, instead of open, vessels, in order to prevent the waste of the alcoholic material, with the escape of the fixed air, or carbonic acid gas, by which it is impregnated. It is thought that by putting the yeast first into the tun and pouring the worts upon it, a better mixture of the ingredients and a speedier and superior fermentation will be the consequence, which may be readily accomplished where there is a wort receiver: the same mass should be allowed to ferment without any subsequent addition, for new and old worts never amalgamate to be sufficiently productive, though a contrary practice has been sometimes followed.

The law has determined that no fermentive matter shall be added to worts until two hours after being set, or until the officer has ascertained the gravity, so that though fermentive matter be added at a very high temperature, even that of 160°, nothing is effected, as no fermentation can take place until the temperature be reduced to at

least 90°, when the process becomes rapid and violent, and the introduction of barm would be immediately discovered. In such cases, the attenuation would not be so low as if the ferment had been added when the liquor was at a proper heat, say from 60° to 80°: neither would the produce be so ample, while the distiller would inevitably be subjected to a heavy penalty; so that the law as it now stands, cannot be defeated by any trick or subterfuge of this nature. Spontaneous fermentation is so slow, uncertain, and inefficient that it cannot be resorted to for any useful purpose, whether for the protection of the fraudulent trader, or to defeat the intentions of the legislature.

Some are of opinion, that the power of the leaven, whether inherent, or added, is not altered but merely suspended, when the temperature is too high, and that in a few days it will resume its original vigour; but an experienced gentleman assures me that the effects of the barm are destroyed. Whether fermentation be excited at a high or a low degree of heat, leaven is absolutely necessary to extricate the alcohol from the substances with which it is combined.

A French Itinerant, a few years since, succeeded in obtaining money by teaching to ferment without yeast, and one of his pupils, an Irish distiller, became a professor of the same art, by which he was a considerable gainer. Yet this gentleman, in the course of his practice, was heard to exclaim on account of the bad working of his concern.—"What am I to do for good barm? without it this establishment must be ultimately ruined!"—a proof that the pretensions of any person to distil without yeast are vain and futile.

It was usual to mix with the wash when going into the still, a quantity of soap in proportion to the magnitude of the charge, at the rate of one pound to 800 gallons; the mode of preparing the soap was to mix it in a bucket, with a quantity of wash or warm water, that it might be reduced to a liquid state. Soap was employed from being found by experience to be the best corrector of the too rapid working of the material in the still, and operating as a preventive to any waste in getting the extract, and also to keep the liquor from rising into the condenser along with the steam: under the present act it is discontinued.

The first run from the still is called *low wines* or *singlings*, and is usually allowed to flow until about 70°, under proof: it is sometimes taken off lower or higher according to the utensils or working of the house; this first running is termed the strong low-wines. What runs

after is preserved in a separate vessel and called *weak low wines*. These are redistilled, the strong low wines first and the weak afterwards. From both is obtained a quantity of strong spirits, and the residue is termed feints, being the weak liquid after the spirits are extracted. These feints are redistilled with the low wines of the next back.

Spirits are made at different strengths; some distillers strike them off so low as 3° or 4° over proof, but the general practice is to strike them off at a strength of from 12 to 18° over proof; much, however, depends on the work and views of the distiller. It is customary to calculate that from a given quantity of grain a certain quantity of spirits can be drawn, the present practice enables distillers to get from $7\frac{8}{10}$ to $8\frac{25}{100}$ imperial gallons of proof spirits from every barrel mashed; and even sometimes nine gallons, much depending on the quality of the grain.

Distillers tabulate their coppers and keives, by which means they are enabled to determine what quantity of liquor at a given temperature is necessary in mashing a certain quantity of grain according to the gravity of the worts required. For example, suppose it is intended to set 7,000 gallons at $51\frac{3}{7}^{\circ}$ at the first mash, 4,000 gallons may be drawn off at 60°: now by multiplying 4,000 by 60 the product is 24,000. Again, by obtaining from a second mash 3,000 gallons at 40°, that in the same manner of calculation will afford 120,000, which added to the 24,000 makes 360,000; this divided by 7,000 (the entire number of gallons designed to be set,) gives a gravity of $51\frac{3}{70}^{\circ}$.

Some distillers draw all the worts from the keive at the first mashing, particularly where the vessels, *viz.*, the mash-tun, under-back, and coolers, are sufficiently capacious. Where this is not the case, the calculations are made in the foregoing manner. If, however, the small worts in the copper shew a gravity of any consideration, due allowance must be made in the quantity of grain to be mashed. Suppose it to be at a gravity of 13° on an average, it is easy to calculate what quantity of grain is to be added to draw off worts of the desired gravity.

If the worts should exceed this gravity, less grain is required to bring the worts to the standard; and if under, more grain must be employed for that purpose.

To illustrate this subject, let it be a question to know what quantity of grain would produce 4,400 gallons of worts, at 51° of gravity,

allowing 1,500 gallons of small worts to remain of the previous brewing. The calculation will stand thus :—

4400 1500 5900	The average quantity of liquid used for the first mashing, as stated on page 660, is	48 gals. per barrel.
	For the second mashing	20 do.
	——— third do.	50 do.
		118 gallons

Then 5,900 divided by 118 quotes 50, the number of barrels required.

Suppose that on the last day of the distiller's brewing period, he has worts in three coppers ; viz.

No. 1 ..... 200 bar. ..... at 22°
2 ..... 200 ..... 13°
3 ..... 200 ..... 4°

and he wishes to use all these worts, but no water in addition ; and he knows by experience that his malt and raw corn will yield 116° of gravity per barrel of 12 stone, or 168lbs. ; it is required to determine how many barrels of malt and corn are necessary to ensure a wort of 43° gravity. The operation is—

$200\times22 = 4400$
$200\times13 = 2600$
$200\times\ 4 = \ 800$

600 — 7800 = 13°

$\frac{7800}{600}$

} As 116° : 1 bar. :: 7800 : $67\frac{7}{29}$

shewing that $67\frac{7}{29}$ barrels of malt and corn are sufficient to yield 13° the average composition of the three coppers.

Now since the required gravity is	43°
The average gravity,	13°
The difference or complement is	30°

Then, As 13 : $67\frac{7}{29}$ :: 30 : $155\frac{65}{377}$, the number of barrels required at 30° gravity ; hence arises the following general rule for all calculations of this nature :—

RULE.

Find the mean gravity and the adequate number of barrels of malt and corn required at the desired gravity, as in the preceding directions : then say,—As the mean gravity : is to the number of barrels of malt and corn thus found : : so is the complement or difference of gravities to the number of barrels of malt and corn required ; or

thus,—Divide the product of the complement of the gravities and number of barrels by the mean gravity, and the result is the barrels of malt required.

To know what malt and corn would be requisite to produce a wort of 50°, allowing 46 barrels at 13° to be on hands at commencing, and the grain, on an average, to possess 120° of extract per barrel of 12 stones. The calculation is as follows :—

46 barrels at 13° produces $46 \times 13 = 598°$ extract, and $50 - 13 = 37$; then $46 \times 37 = 1702$, which divided by 120° quotes $14\frac{1}{6}$ barrels or 2 stones nearly, the quantity necessary to be brewed to produce the complement required.

To brew and ferment at one operation has lately been attempted, by which it is thought the quantity of the spirit is augmented while the quality is improved. The process is by mixing 1000lbs. of malt finely ground, with 300lbs. of wheaten meal ; then gradually adding 200 gallons of water, stirring it well all the time till completely mixed, and afterwards adding 500 gallons of boiling water, mixing the whole quantity thoroughly. It is then suffered to stand for two hours and again mixed, and when cold about 12 or 13 pounds of solid yeast are added, and the whole allowed to ferment in a warm place in a vessel loosely covered. This experiment may, in course of time, lead to beneficial results, but the certainty of success is not founded on sufficient grounds to ensure a recommendation of its adoption.

Many distillers use super-carbonate of soda, and others alkalis, for the purpose of facilitating fermentation and correcting acidity ; but these should not be resorted to without great caution, as they cause too violent a working of the back, loss in produce, and impart an injurious flavour. Some add sulphuric acid to the wash, in order to prevent an oil from the grain coming over with alcohol, which, if not effected, the taste and flavour of the spirits is apt to be injured.

To make pure spirit, all required is, a good wholesome grain, caution in brewing, a regular fermentation, and attention to the distillation. It is manifestly the interest of every distiller to purchase the best description of grain, whether malted or unmalted ; a clear, full, hard, and well preserved grain, free from must or smell of any kind, is the best. All the raw grain used in distilleries is kiln-dried before it is sent to the mill, in which process great care should be observed, so that it is not too dry or too crisp, it being sufficient to dry it to that consistence termed *mill-free*, that is, when it is thought to break freely in grinding.

At the close of any period, a distiller may satisfy himself as to the correctness of the work by dividing the number of gallons obtained,

by the number of barrels of grain consumed, and should this not shew from 7° to 8° of imperial proof, there must, from the previous principles, appear to be an error somewhere, either in conducting the process, or from a defect in the materials.

Formerly it was the practice, in order to make spirits shew a fictitious strength, to add a mixture of vitriol and oil to make it stand what is termed *one* to *two*, but by this auxiliary, the flavour was injured; besides, it was common to superadd almond oil and burned sugar to give it the appearance of age: but these subterfuges are now rarely resorted to, nothing being employed to render the spirit more palatable than its own intrinsic excellence.

The spirit distilled from pure malt is considered superior to that made from a mixture of malt and raw grain. To assign a reason for this would require an analysis and detail of the process of malting; but it may be sufficient to observe, that the effects of the malting process are similar to that which the grain undergoes in the course of vegetation when sown in the earth. To illustrate this, it is necessary to state, that by the heat and moisture of the ground, the cotyledons of the seed are changed into sugar and mucilage before germination is completed. Malting is only the artificial method of effecting a similar operation, taking care to check the growth of the grain by kiln-drying, that advantage may be taken of all the sugar that it is capable of evolving. Barley contains starch and sugar; and a considerable portion of the former is converted into the latter by the malting, so that the quantity of saccharine matter is increased in proportion. Illicit distillers, as if aware of the value of this change, almost always use malted grain. From a want of scientific knowledge and proper utensils, they conduct their business in a different manner from that pursued by licensed traders. In preparing the malt, the sacks of barley are generally steeped in bog-holes or other places, where it remains forty-eight hours, or until completely saturated with the water. They are then drawn out, and drained for ten or twelve hours, where it lies till it begins to chip or germinate, and is turned occasionally, until all appear alike germinated. It is afterwards spread on the floor by degrees till such time as the buds shew three points, and kept at a regular heat till the bud or germ has grown half down the grain, at which period of time each of the particles may be nearly seen through, or become transparent. At this stage it is spread thicker on the floor, and brought to a heat easily perceptible to the hand; then thrown into a round heap and suffered to remain in that state for twenty-four hours, or longer; and

this is termed the *rot* or *withering heap*. It is then carried to the kiln and dried by turf—the kiln-head on which it is dried is covered with rotten straw, over which, if convenient, is placed hair-cloth or matting. The period of drying a kiln-head or crop, as it termed, is commonly for twenty-four hours, when directed by a person of experience. While on the kiln, it is carefully turned by the hand so as to expose every particle to a like degree of heat, and to prepare it for grinding. This process consists merely in bruising or breaking the grain, but not reducing it to flour. When thus prepared, it is taken to the still-house, which is generally a hovel or excavation near a running stream, or where there is a full supply of water. The quantity of malt to be brewed is commonly from sixteen to seventeen stones. After being bruised or mashed in the usual way, it is covered in the keive, with a lid or sacks, and allowed to stand for three or four hours. The worts are then drawn off and cooled to a temperature regulated by the finger, no instrument being used for that purpose; and commonly to the same degree as that which is observed in regular distilleries. The worts are then put into a pipe or puncheon, with about a gallon of barm. The worts soon begin to ferment, generally an hour or two after the barm is added; they are allowed to stand in a state of fermentation for twenty-four hours, and then prepared. These two brewings, after undergoing the fermenting process for about eighteen hours, are considered fit for the still, and in the ordinary course of working, a brewing is made each morning. The quantity of pure spirits drawn from these two brewings, usually consists of 223 gallons of from *one* to *two*, or from *two* to *five*; or, in other words, the spirit is of that strength that it will bear *one* gallon to about *two* of spirits, or *two* gallons of water to *five* of spirits to bring it to proof. The usual strength at which illicit spirits are made, is from *four* to *six* over proof on Sykes's hydrometer; but sometimes it is made at 8 per cent. over proof; and, in many cases, it has been sold at a strength of 30 over proof.

Illicit stills are generally made of tin or copper; sometimes of a tin body and copper bottom; often a large, black, metal pot is used. The worm is either made of copper or tin, according to the caprice of the smuggler. These stills range from 40 to 74 gallons' content, one being made to serve the double purpose of a still and copper. The fuel employed in the working of the stills has no effect on the flavour of the whiskey, whether it be of turf, wood, or coal.

In making the malt, and in the mode of distilling, the flavour is altogether formed; no machinery is employed in the still to keep the liquid from burning; and hence the empyreumatic taste and smell are

communicated to the liquor, and also to the backing, as it is called, of oatmeal and hot water.

In distilling the wash, the strong low-wines are separated from the weak, the latter being thrown back into the still with the succeeding charge of wash; a similar practice is observed in making spirits, the feints being put into the still with the next charge of low-wines. Thus the spirits are preserved pure and clear, nothing whatever being used in the distillation but a small quantity of soap thrown into the still with the pot-ale to neutralise, or keep down the barm, (as they term it,) which would, otherwise, cause the run of the low-wines to become coloured like the wash, or to get foul. It is a mistaken notion to suppose that soap is used only by the great distillers, since it is considered an indispensable article by every person who understands the mode of working a still on the old system.

The manufacture of these illicit stills has been long a favourite beverage in Ireland, being from malt without adulteration, and possessing a flavour which habit has rendered most agreeable. This, combined with the high duties on legally-distilled spirits, and the want of a ready market for the disposal of the grain of remote and mountainous districts, induced the people to embark in this illicit traffic to an extent, which was not only injurious to the agriculture and revenue of the country, but to the morals and peaceful habits of the community. To such an extent was it carried, that in 1806, out of 11,400,030 gallons, (the computed consumption of spirits in Ireland in that year,) 3,800,000 gallons were allowed to be the produce of illicit manufacturers; and in 1811, 1812, and 1813, there were no less than 19,067 illicit distilleries destroyed by the revenue and military.

To put down this illicit trade, various enactments were passed by the legislature, among which that of fining the townlands on which any portion of a still, wash, low wines, or other materials for distillation were found, was not the least oppressive. The annual average of fines levied for seven years under the act for the suppression of this evil, amounted to £50,989 for all Ireland, while in one county alone the sum laid for 1806, was £2,620; in 1807, £2,750; and in 1814, £18,125. How could it be expected to be otherwise, when it was proved before the parliamentary commissioners, that many men were found to declare that they had never done a day's work in their lives but at illicit distillation, and that they knew nothing else by which they could gain subsistence.

Many interesting and curious facts might be related of the extraordinary contrivances of the people to evade the law and prevent detection, such as the artful construction of distilleries on the boundaries of townlands, in the caverns of mountains, on islands in lakes, on boats in rivers; of carrying away and secreting revenue officers for weeks together to prevent their giving testimony, the romantic manner of their treatment while in confinement, and the various other schemes and devices to defeat the intentions of the government.

Among these may be mentioned the instance of a person who had constructed a distillery so artfully, that it eluded the vigilance of the most expert officers of excise, though known to have long existed in the neighbourhood. A determined gentleman of this department resolved to find it out at all hazards, and, on one moonlight night, unaccompanied by any person, he followed a horse led by a peasant, having a sack across the back of the animal, which, he suspected contained materials for this mysterious manufactory. When the horse had arrived at a certain place, the sack was removed from his back, and suddenly disappeared. The officer made his observations, returned to his residence, and having procured military assistance, repaired to the place where the horse had been unloaded. All was silent, the moon shone bright, the ground was unmarked by any peculiar appearance, and he was almost inclined, (as well as those who accompanied him) to think that he laboured under a delusion. Perceiving, however, some brambles loosely scattered about the place, he proceeded to examine more minutely, and on their removal, discovered some loose sods, under which was found a trap door leading to a small cavern, at the bottom of which was a complete distillery at full work, supplied by a subterraneous stream, and the smoke conveyed from it through the windings of a tube that was made to communicate with the funnel of the chimney of the distiller's dwelling-house, situated at a considerable distance.

Another distillery has been known to be worked on the site, and in conjunction with a lime-kiln, which, from the kiln being continually in operation, kept the other for years without detection. So cunningly were some of those still-houses situated, and so artfully constructed, that the smoke proceeding from them was made to issue as if from burning heath, or sods of peat, ignited for manure. Their position was, for the most part, either on a commanding eminence, in the centre of a bog, or in a well-secured fastness; but always calculated to prevent the identity of townland or proprietorship, while the

portability and easy removal of the apparatus rendered the discovery and seizure of those stills difficult and hazardous. On the approach of a stranger, an alarm was given either by deputing a messenger or sounding a horn, while the machinery was removed, and the potale always destroyed or conveyed into receptacles under ground prepared for such exigencies. Thus the still-hunter was often disappointed of his expected prize, the poor distiller put to the loss of many a brewing, and the excise officer rendered the object of the hatred and vindictive feeling of the unreflecting peasantry.

The subjoined engraving represents a distillery of this description at full work, with a party of police approaching to seize it, while two peasants may be seen on the rocks, sounding their horns to alarm the smugglers.

The fines on townlands having been abolished, it was found necessary to adopt some other measure to put down illicit distillation—recourse was, therefore, had to a Revenue Police, the Excise officers having too much other business to attend to, and the difficulty and expense of procuring regular military assistance being almost insurmountable. Accordingly, a Revenue Police was established in 1822, and was gradually augmented in proportion to the exigency of the service. In 1826, this force amounted to thirty-two parties; in

January, 1833, to fifty-seven parties, and in the present year to seventy parties—amounting, including officers and men, to upwards of 1200 persons. They were distributed through those parts of the country in which illicit distillation most prevailed, and though their exertions have been very great, yet they have but partially suppressed the evil.

Their services will be best appreciated by an enumeration of the detections made by them in four successive years :—

	Stills.	Malt Bush.	Distilleries.	Worts Galls.	Spirits seized.
1830...	804	25136	1788	122263	624
1831...	723	24901	1479	106908	353
1832...	974	47683	2299	203472	1150
1833...	1539	71782	3300	320813	6944

Since the re-organization of the Revenue Police under the superintendence of Colonel Brereton, and the judicious alterations made by him, this force has become more effective, and will, no doubt, prove of great benefit to the Revenue.

Experience has proved that illicit distillation has always decreased in proportion to the lowness of the duty, so that it was almost annihilated by the reduction which took place in 1823, by causing a substitution nearly universal of the legal for the illegal article. Difference of opinion, however, exists respecting the extent to which a reduction of duty should be made; perhaps the best means to prevent the evil under consideration, would be to reduce the duty in proportion to the average price of grain in the provinces, so that the temptation to manufacture spirits from it, would be less than the grain itself would bring in the market. Such a measure could scarcely fail of having, at least, a powerful influence, if not of effecting a total suppression of the illegal practice, while it would give the preponderance in favour of the legal manufacturer.

Of the many plans which have been laid to obstruct the revenue officers in the discharge of their duty, the following is not the least deserving of notice :—On the approach of the Assizes in 1803, when many were about to be prosecuted for illicitly distilling, an officer, stationed at Dunfanaghy, in the County of Donegal, who was to support the informations, was suddenly seized, blind-folded, and carried away by a body of men in disguise, and brought to the island of Arran on the western coast. From thence he was conveyed to the islands of Goal, Innismay, &c. where he was closely confined, often threatened with the loss of life, and was even obliged, by way of

humiliation for his active services, to assist in the working of an illicit still; while, like another Tantalus, the cup of pleasure was held to his parched lips, without the liberty of gratifying his thirsty desires. At the end of thirteen days, when the necessity for his confinement had ceased, he was again blindfolded, taken from the island, and sent a considerable distance into the interior of the country, where the mask was removed from his face, and he was allowed in the solitude of night, to make his way to his disconsolate family, who, all the time, had looked upon his restoration as hopeless. Another officer, on a similar occasion, was hurried from his bed, without any covering except his shirt and trousers, put into a sack, thrown across the back of a horse, and, in this manner, was conducted to the margin of a lake, where, in his own hearing, a consultation was held whether he should be drowned by tieing a stone to the sack and committing it to the deep, or that he should be put to a more lingering and torturing death. In this awful state of suspense he was removed to a mountainous part of the country, where he was subjected to every kind of insult and privation, continually menaced with death in every shape of barbarity, led out at night as if about to be executed, and again conducted to his solitary habitation, anticipating a renewal of further cruelties. In this state he was retained for a considerable time, till the Judge who presided at the Assizes, during the trial of some persons for illicitly distilling, suspecting the parties as being accessary to this outrage, told them, that if the officer who had been taken away, were not immediately liberated, he would pass such a sentence on them as would for ever put it out of their power to commit such another offence, and gave them but twenty-four hours for his restoration. This had the desired effect: the unfortunate man was again put into a sack and restored to his family in the same manner as that in which he had been carried away.

To the vigorous measures of government, aided by the gentry of the country, but more to the lowering of the duty and the encouragement given to small stills, the present decrease of illicit distillation may be mainly attributed; and though it still exists, its prevalence is but comparatively partial.

The legal distilling establishments of the country are, for the most part, conducted on an extensive scale, the stills ranging from 500 to 20,000 gallons' contents. In Cork, the establishments of Wyse, Callaghan, Morrogh, Lyons, O'Keeffe, Shee, and Daly, are of immense magnitude, while the concern of Murphy, as well as that of Hackett at Middleton, are little inferior. The distillery of Clonmel contains

3 mash-tuns containing 52,000 gallons, and capable of using 400 barrels of grain in a day. It has 5 coolers containing 25,000 gallons, with 12 wash-backs holding 167,000 gallons; one wash-charger of 14,700 gallons; 2 low wines' and feints' chargers 6,000 gallons; 2 low-wines' stills 13,000 gallons, and one wash-still of 20,400 gallons.

The quantity of wash fermented and consumed in a period of 12 days, varies from 158 to 160,000 gallons, producing about 19,000 gallons of proof spirits. The charge for the year ended 5th January 1838, was 384,000 gallons. This concern works about nine months in the year, and gives daily employment to about one hundred and fifty persons.

Brown's establishment in Limerick has two stills for wash, concontaining 28,000 gallons, and two for low-wines, containing 12,000 gallons. There are eleven wash-backs, each averaging 30,000 gallons, one wash-charger, 36,600; two low-wines' receivers, 4,500; two feints' receivers, 4,500; two low-wines and feints' chargers, 25,000; one under-back, 11,000; one bub-tun, 15,000; one spirit receiver, 3,500; five spirits' store-casks, each 20,000; one metal cooler, in three parts, 100,000; and one worts' receiver containing 40,320 gallons. In a bonded warehouse on the premises, there are generally sorted from 500 to 800 puncheons of spirits. There are also two malthouses, which work six months in the year, each of which wets 530 bushels of barley twice in the week. The machinery is worked by two steam-engines, one of which is of 40 horse power. Besides 3000 tons of coal annually consumed, there are upwards of 20,000 boxes of turf brought down the Shannon from a bog about seven miles distant; in the cutting, drying, and making up of this turf, five hundred persons are constantly employed. The site of the distillery occupies about three acres, and the machinery and utensils are estimated to have cost upwards of £200,000. A medical gentleman has a salary for attendance on the labourers, to whom half wages are given in case of their being rendered incapable of work, either from age or accident.

The distillery of Mr. James Jameson, Marrowbone-lane, Dublin, has four stills; two for wash, containing 27,675 gallons; two for low-wines, 13,807; two metal mash-tuns, 67,776; six coppers, 83,935; two under-backs, 9,423; seven coolers, 88,260 gallons; besides cooling-pipes of great extent. There is a wash-charger holding 26,422, and an intermediate one containing 17,831 gallons; there are ten fermenting wash-backs capable of holding 382,098 gallons. One of these alone holds 51,798; and three others upwards of

46,500 gallons each. The two low-wines' receivers contain 15,395 gallons; two low-wines' chargers, 20,705; two feints' receivers, 8936; one spirit receiver, 5729; and three spirits' store-casks containing 22,902 gallons. In a period of four days, (the time occupied in distilling,) 35,000 gallons of spirits are manufactured, and two hundred and forty tons of coals are consumed in thirteen days, the usual time occupied in brewing and distilling. This establishment works about eighteen periods in the year, so that 630,000 gallons of spirits are produced and 4320 tons of coals are consumed. The machinery is worked by two steam-engines, one of twenty-six, and the other of fourteen horse power. There are warehouses on the premises for bonding spirits, capable of containing 1600 puncheons, and the concerns occupy a space of nearly five acres in extent.

In one of the large concerns worked in the city of Dublin, the capacity of the stills worked, are two for the distillation of wash, 17,456 gallons, two for that of low-wines, 9,022 gallons each; besides these, there are four coppers for brewing, containing 59,832 gallons, with two mash-tuns, holding 9,118 bushels of grain. In these are usually mashed 3000 bushels at one brewing; the under-back contains 8,321 gallons, and there are four coolers that hold at one inch in depth, 5,893 gallons. The tun for making bub, contains 2,790 gallons, and there are thirteen backs capable of receiving 432,414 gallons of wash at a time. The jack-back contains 2,065 gallons, the wash charger, 26,938; the two low-wines' receivers, 14,887; the spirit receiver 4,695, two feints' receivers, 9,431; two low-wines and feints' chargers 18,695; three store-casks for spirits 11,902 gallons. In one brewing period 15,290 bushels of malted and unmalted corn are mashed, producing 262,747 gallons of wash at 60° of gravity, which is completed in six working days; and in six succeeding days, the entire is distilled, producing, at an average attenuation, 31,150 gals. of proof spirits, the duty on which, at 2*s.* 4*d.* per gallon, amounts to £3,634 3*s.* 4*d.* The coal consumed for the twelve days occupied in brewing and distilling is 200 tons, and there are 30 men constantly employed in the concern. The barm alone for one period, stands the proprietor £360, while the produce of the grains and hog-wash brings in return £400. In one year this establishment completed eighteen distilling periods, turning out 60,730 gallons of proof spirits, and yielding a revenue of £65,415. Taking this as a fair standard, on which to found a calculation of what may be the expense attending the manufacture of spirits in Ireland, it does not appear to exceed 2s. 6d. for every gallon distilled.

			Bushels.					
Allowing	$\frac{1}{7}$	for malt	2184	at 6s. 3d	per bush.	£682	10s.	0d.
...	$\frac{3}{7}$	for barley	6553	at 3 $4\frac{1}{2}$		1105	16	$4\frac{1}{2}$
...	$\frac{3}{7}$	for oats	6553	at 2 $7\frac{1}{2}$		860	1	$7\frac{1}{2}$
The average cost for grain would be ...						2648	8	0
200 tons of coals at 12s. per ton. ...						120	0	0
Carriage, at 2s. per do. ...						20	0	0
Barm.						360	0	0
Total cost of materials						3148	8	0
Deduct for hog-wash and grains						400	0	0
Net cost for materials.						2748	8	0
Add duty, at 2s. 4d. per proof gal.						3634	3	4
Stands distiller for materials and duty. ...						6382	11	4
Rating sales, at 5s. 7d. per gallon 25 per cent. O.P. the whole 24,920 galls. at that strength, or 31,150 at proof, would bring						6956	16	8
Balance to meet expenses, &c.						574	5	4

On this principle it is easy to calculate what the price of whiskey should be, to make the trade of a distiller an object worthy of speculation.

Few countries afford better means or facilities for conducting this business than Ireland, grain being plentiful, fuel cheap, water in abundance, workmen numerous, and eager for employment, with a ready market always to be had for the disposal of the commodity. In estimating the qualities of grain for distilleries, much depends on the soil, climate, and season; hence calculations founded on any given data, without considerations of this kind, might lead to erroneous results, the relative proportions of mucilage, sugar, gluten, and nutritive, or soluble matter, varying in different countries. The grain of the south of Europe excels that of the north, owing to the different influence of heat, dryness, and moisture. It must, therefore, be valuable to the distiller, brewer, or experimentalist, to be presented with the following tabular view of the chemical analysis of the principal articles from which spirits, or other liquors, are, or may be, extracted, as given by Sir Humphrey Davy and other eminent philosophers.

Names of Articles.	In parts of Meal.	Soluble or nutritive matter.	Mucilage or Starch.	Saccharine matter or sugar.	Gluten or Albumen.	Matter insoluble in evaporation.
Barley, bere or bigg	1000	920	790	70	60	...
Maize	100	...	82	...	...	...
Millet	100	...	75	...	...	...
Oats, or corn	100	...	59	2	6	...
Rice	100	80	84	...	...	...
Rye	1000	...	61	...	5	...
Wheat sown in Autumn	100	85	77	...	19	..
Do. in Spring	100	...	70	...	24	...
Beans (common) ...	1000	570	426	...	103	...
Beans (kidney)	...	89	67	...	22	..
Lentils	...	71	39	...	32	...
Peas, (dry)	...	574	501	22	35	...
Tares	...	65	36	...	29	...
Beet (Red)	...	148	14	121	13	...
Beet (White)	...	136	13	119	4	...
Cabbage*	...	73	41	24	8	...
Carrot	...	98	3	95	...	...
Mangold wurzel ...	...	136	13	119	4	...
Parsnip	...	99	9	90	...	...
Potato	...	from 260 to 200	200 to 155	20 to 15	40 to 30	...
Turnip (common)	...	42	7	34	1	...
Turnip (Swedish)	...	64	9	51	2	...
Clover (Red)	...	39	31	3	2	3
Clover (White) ...	...	32	29	1	3	5
Cow-grass	...	39	30	4	3	2
Lucern.....	...	23	18	1	...	4
Saintfoin	...	39	28	2	3	6

The basis of all spirits and vinous fermentation is sugar, and no intoxicating beverage can be obtained from any substance, which does not contain a portion of this material; nor is there any substance, which contains it, that is not productive of the alcoholic principle to a greater or less degree, either in proportion to the saccharine quantity, or to its combination with other matter. Chemists are divided as to

* Cabbages were in common use among the ancients, and Cato wrote volumes descriptive of their nature and value. The Indians had such veneration for cabbages that they swore by them, and were, in that respect, as superstitious as the Egyptians, who paid divine honors to leeks and onions for the great benefit, which they conceived, they derived from them.

the constituent parts of sugar; all, however, agree that it is composed of carbon, oxygen, and hydrogen, but no experiments have yet determined the exact proportion of each; and a recent analysis has proved that the difference between the composition of starch and that of sugar is trifling, and that the former principle is easily converted into the latter by natural, as well as artificial operations, and that this occurs as well in the germination of seeds as in the process of malting: hence it is evident why those fruits, roots, and seeds, or grain, which contain the largest proportion of starch, yield the greatest quantities of alcohol or spirits. The quantity of saccharine matter contained in any grain, or edible plant, will be found by making a tincture of the vegetable to be assayed in rectified spirits of wine, which, when saturated by heat, will deposit the sugar by standing in a cool place.

The following table exhibits the quantity of alcohol, (sp. gr. .825 at 60° Fahrenheit) in several kinds of wines and other liquors, as ascertained by the experiments of Mr. Brande.

	Per cent. per measure.		Per cent. per measure.
Port, average of six kinds	23.48	Hock	8.88
Do. highest,	25.83	Palm wine,	4.70
Do. lowest,	21.40	Vin de Grave,	12.80
Sherry, average of four kinds	17.92	Frontignac,	12.79
Do. highest,	19.83	Coti Roti	12.32
Do. lowest,	13.25	Rousillon,	17.26
Claret, average of two kinds	14.42	Cape Madeira,	18.11
Calcavella,	18.10	Cape Muschat,	18.25
Lisbon	18.94	Constantia,	19..75
Malaga,	17.26	Tent,	13.30
Bucellas,	18.49	Shiraz,	15.52
Red Madeira	18.40	Syracuse,	15.28
Malmsey Madeira	16.40	Nice,	14.63
Marsala	25.87	Tokay,	9.88
Do.	17.26	Raisin Wine,	25.77
Madeira, highest,	24.42	Grape Wine,	18.11
Do. lowest,	19.34	Currant Wine,	20.55
Red Champagne,	11.30	Gooseberry Wine,	11.84
White do.	12.80	Elder Wine. Cider & Perry,	9.87
Burgundy,	11.55	Stout,	6.80
Do.	11.95	Ale,	8.88
White Hermitage,	17.43	Brandy,	53.39
Red do.	12.32	Rum	53.68
Hock	14.37	Hollands,	51.60

From the preceding table, it appears that port, madeira, marsala, raisin, and currant wines, contain the greatest bulk of alcohol, so that

a person after taking a bottle of any of those, will have swallowed nearly an half pint of alcohol, or almost a pint of pure brandy, without experiencing those intoxicating effects, which either alcohol, or brandy, would produce separately. In wine, the alcohol is so blended with other matter as to prevent it acting with such vigour on the stomach, until its influence is changed by the powers of digestion, and, by this combination, its activity on the system is completely modified.

To what intoxication may be attributed, whether to the alcohol, or pure spirits, incorporating with the blood, or to the sympathy of communication between the stomach and the head, has not yet been clearly ascertained. But if conjecture be admitted, the most plausible hypothesis seems to be, that the heat of the stomach acting on the volatile principle of the fluid, causes it to ascend to the brain, and to affect it through the medium of the nerves. A case is recounted of a person brought dead into Westminster Hospital, after having drunk a quart of gin for a wager, within the lateral ventricles of whose brain a quantity of clear fluid was found, strongly impregnated with gin.* In support of a contrary hypothesis, it is urged from the experiments of Majendie, that the blood of a dog, which had been made to swallow some diluted alcohol, exhaled a strong odour of the spirit; but by what means it makes its way to the seat of reason may still remain one of those secrets, into which the eye of the philosopher can never penetrate

Observation and experiment have recently proved, that persons accustomed to the drinking of ardent spirits are subject to spontaneous combustion—a proof that the blood must be strongly impregnated with the alcoholic principle. A case of this kind was lately described in the New York Courier, in the instance of an old man, who had drunk a large quantity of rum. Having been bled, and a lighted taper applied to the blood, it burned blue, and continued to blaze freely for thirty seconds: every toper, therefore, should be cautious of coming in contact with any ignited material, since he is as liable to blow up as a cask of French brandy.

The growing magnitude of distillation in Ireland led, as before remarked, to the passing of numberless acts of parliament for its regulation. Still, however, the ingenuity of the distillers baffled the provisions of any enactment, by which the trade was governed, and

* Pharmacologia of Dr. Paris, vol. i. p. 142.

they succeeded to smuggle to an enormous extent. Besides this evil, private distillation had so forced itself on the notice of government, from its demoralizing tendency, that it was found necessary to direct an inquiry into the laws which controled the operations of the distillers of the United Kingdom. During the course of that inquiry, a vast mass of information was collected, and the respective merits of the various systems then in use were compared and determined, so far as regarded the practibility of extending one uniform plan of work to the whole empire. After a close examination, it was considered that the principle of the law then existing in Scotland, (a law originally suggested by the distillers themselves) which was that of charging the duty according to the gravity of the worts, or wash, with the use of the saccharometer for that purpose, was the best calculated for obtaining the object in view. The value of this instrument, as applied to distilling purposes, was for a long time known to the trade, and had in 1799, attracted the attention of the Scotch officers of the revenue; but its application as a test, or criterion for ascertaining the gravity of worts was not introduced till 1816, when the law in Scotland was modified to embrace all the checks of the English system, with the other improvements consequent on the use of the saccharometer.

The extension of the Scotch system to Ireland, afforded the opportunity of revising the act, under which it was conducted; and instead of distillers being restricted from making worts lower than 60°, (which was the case in Scotland,) it was thought expedient to remove every obstacle of this description, and permit them to distil worts at any gravity from 30° to 80°, to be ascertained by such a saccharometer as the Lords of the Treasury might order.

While on this subject it may be proper to remark that the saccharometer, (from σαχαρ, *sugar*, and μετρον, a *measure*) is a simple machine invented in 1784 by Mr. Richardson, a brewer at Hull.

It is usually composed of brass, and is nothing more or less than as its name imports—a measure of sweetness, or saccharine matter. The form of that now used in the Excise department, and known by the name of Bate's saccharometer, (from Wm. Brettell Bate, the inventor, ordered by the Treasury in 1823, to be used instead of Allan's under the act of the 4th Geo. 4, ch. 94.) is about 7½ inches long, consisting of an elliptical ball, or float, with a flat graduated stem of 4½ inches in length, having a small loop at the bottom. The divisions on the scale are numbered downwards from 1° to 30°, and it is supplied with five weights fitted to the loop, and marked 970, 1000, 1030, 1060,

and 1090 : the first weight being for attenuation below water, the 1000 at water, and the others above water. The instrument is accompanied with a book of tables to assist in the calculation of the gravities, and to which the reader is referred for further illustration. It was constructed to ascertain the sweetness of worts, or to compare their weight with that of equal quantities of the water employed. In fact, it may be said to be a *hydrometer* calculated to shew the specific gravity of wash instead of spirits. For, as spirituous liquors are strong in proportion to their levity, or weak in proportion to their gravity, and as the hydrometer will sink deeper in strong than in weak spirits, so the saccharometer will sink deeper in weak than in strong worts.

Respecting the history of this instrument, which has become the standard for the collection of the revenue, and the regulator of the work of brewers and distillers, it is a curious fact that Mr. Richardson, previous to its invention, had realized a considerable independence but that after the application of the saccharometer, his manufacture was less esteemed, and he lost that custom and celebrity by which he had previously acquired so much : such too frequently has been the fate of those by whom society has been most benefited!

Traders have been in the habit of using the saccharometer invented by Mr. Dicas, of Liverpool ; it is calculated to shew the gravity or saccharine matter in an English ale-barrel of 36 gallons, equal to 44 gallons' wine-measure. When a wort, therefore, is stated upon it to be of 60lbs., or 60° gravity, the meaning is, that 36 gallons of such liquid weighs its weight of water and 60lbs. more, so that among distillers and brewers by degrees of gravity is meant the excess of the weight of worts above that of an equal bulk of water in 1000 parts of the latter : hence the heavier the malt infusion, or worts, as it is termed, the greater the value, since it holds in solution a greater quantity of saccharine matter. All liquids, as well as most other bodies, expand by heat and contract by cold, consequently worts, or wash, are effected, less or more, by the temperature. Experiments have shewn that a cubic foot of rain-water at a heat of 60°, weighs 1000 ounces avoirdupois, but when raised to the temperature of 100° it increases its volume to $\frac{1}{1}\frac{1}{0}\frac{1}{7}$ of its bulk. Water, therefore, has been called 1000, and it is indifferently expressed 1000, or decimally 1.000 and is used as the standard of all substances, whether solid or fluid. Hence in tables of specific gravities, the figures express how many times 1000 ounces of the different substances a cubic foot contains.

The following is the specific gravity of most of the various liquids and other articles mentioned in this work :—

Acetic Acid,	1.007	Steam,	690
Alcohol or Spirits of Wine, commercial	837	Oxygen,	1.044
Alcohol or Spirits of Wine, highly rect.	829	Sugar, white,	1.606
Atmospheric or common air	1.000	Vapour of Alcohol,	2.100
Azote or Nitrogen gas,	969	Vinegar distilled,	1.010
Beer, pale,	1.023	Water, rain	1.000
—— brown,	1.034	——— distilled,	1.000
Carbonic Acid Gas,	1.520	——— sea,	1.026
Cider,	1..018	Wine, Burgundy,	992
Honey,	1.450	——— Bourdeaux,	994
Hydrogen Gas,	074	——— Champagne, white,	998
Milk of Cows,	1.0324	——— Canary,	1.033
——— Mare's,	1.034	——— Constance,	1.082
——— Ass's,	1.035	——— Madeira,	1.038
——— Ewe's	1.040	——— Malaga,	1.022
——— Goat's	1.034	——— Port,	997
Opium,	1.335	——— Tokay,	1054

As there are 1728 cubic inches in a cubic foot, and 277,274 in an imperial gallon, $\frac{1728}{277,274}$=6.2325, the gallons in a cubic foot.

The specific gravity of any fluid may be found by weighing a certain quantity (a quart for instance) and multiplying the weight by the number of quarts in 6.2325 gallons. It is customary, however, for the sake of convenience and accuracy to use, a small phial with a narrow neck, and when completely filled with the fluid to weigh it in a scale that will turn with the tenth or less of a grain. Suppose then the weight to be 1490.2 grains ; and as 6.2325 weigh 1000 ounces, say—6.2325gal. : 1000oz. : 1gal. : 160.44oz.=7701 1grs. the weight of a gallon, and $\frac{7704}{8}$=9712.6grs. the weight of a pint : consequently $\frac{9712.6}{1490.2}$=6,5176, by which the weight of any fluid being multipled, the product will be the weight of an imperial pint of that fluid, this being again multiplied by 49.86, the number of pints in 6,2325 gallons, the product is the specific gravity.

To save such calculations and the trouble attending them, instruments have been invented upon the principle that bodies immersed in a fluid meet with a resistance proportioned to the specific gravity of such fluid : hence their use and importance in determining the strength of spirituous liquors.

To ascertain correctly the specific gravity of worts, the use of a thermometer is indispensable, in order to determine what is to be added to or taken from the general standard of 60°, at which point tables of specific gravities are usually calculated.

To determine the quantity of spirit to be drawn from wort or wash,

it was presumed to be in all cases directly according to its attenuation. The work of the Scotch distillers proved that worts of 5lbs. gravity should produce one gallon of proof spirits, or in other words for every 5° of gravity attenuated in every 100 gallons of worts, there ought to be *one* gallon of proof spirits, to which *one-fifth* might be added for a maximum. Suppose, then, 10,020 gallons of worts are set at a gravity of 60°, and that it is required to know what quantity of proof spirits should be expected from them, on the presumption that this is a correct theory. Allowing the whole to be attenuated, so as to show either nothing by the instrument, or a gravity of 3lbs or degrees, the calculation will be:—

When attenuated to water:— 60° gravity at commencement 0° attenuated.		When 3° is the gravity:— 60° gravity at commencement 3° attenuated.	
60°		57°	
	10020.0		10020.0
	60		57°
	5) 6012.000		5) 5711.400
Proof gallons	1202.4	Spirits	1142.28
Add $\frac{1}{5}$	240.48	Add $\frac{1}{5}$	228.456
Maximum	1442.88	Maximum	1370.736

Thus having the gravity of any wort correctly ascertained at the outset, it is easy to estimate the quantity of proof spirits, which ought to be extracted, giving credit in all cases for any unattenuated matter, it being presumed that no spirit can be drawn from any unfermented liquid. The reason why the degrees of attenuation are placed as decimals in the examples given above, is to prevent the trouble of dividing by 100 the number of gallons allowed in the whole quantity for every five degrees of attenuation. The real operation is simply that of a question in the Rule of Three, the statements of which are,

As 100 : 60° : : 10020 : 6012 and
As 100 : 57° : : 10020 : 5711.4

which severally divided by 5 gives the respective quantities of spirits.

On the foregoing theoretical and practical deductions was founded the Act of 4 Geo. IV. c. 94, for the regulation of the Scotch and Irish distilleries. This law, which received the royal assent on the 18th July, 1823, permits stills of a capacity so low as 40 gallons to be licensed, without any restriction as to a higher content; but for minute particulars the act itself must be consulted. Here it may be sufficient

to state, that there are three modes of charging the duty, either on the wash, the low-wines, or the spirits, whichever of them happens to be highest. The brewing and distilling must be conducted in alternate periods; during the process of brewing there can be no distillation, and during distilling there can be no brewing. Six days' notice must be given before commencing or re-commencing brewing, and a notice of the gravity under which the trader intends to work; and which may be from 30° to 80°. This gravity cannot be changed until the expiration of a month. If the worts of a brewing are collected in a receiver, a declaration of the quantity and gravity must be delivered to the officer, who is obliged to take an account of them in one hour after; but if collected in the fermenting-back, (the running of the wort into which must be finished in six hours) the gravity must be taken within two hours. No fermentable matter can be added before this gravity is taken. Should the gravity or quantity exceed the declaration by 5 ℔ cent. a penalty of £200 is incurred. When the increase exceeds 5 ℔ cent. the wort is deemed new and the distiller is chargeable with the duty accordingly. The duty on the wash is a percentage of one gallon for every 5 degrees attenuated; on the low-wines, by a comparison of their strength with that of proof spirits after making an allowance of 5 ℔ cent. on the whole; on the spirits by the produce of low-wines and feints calculated as proof spirits.

Exclusive of the regular daily charges of any of the three modes just mentioned, whichever may be the highest, and which are charged at the expiration of every distilling period a yearly account is to be made up of all the wash distilled during the term of the license, at the respective monthly gravity or gravities declared by the distiller, reduced to proof spirits. And if that calculated quantity of spirits shall be more than what the distiller has already been charged with, he must then pay the duty on the difference, which amounts, in fact, to this, that although he gets credit for bad fermentation in the charge from each back, yet it is the declared gravity which is eventually charged and paid for. The ordinary charge against the distiller must be made within six days after every distilling period, and the deficiency charge at the expiration of the license, on the 10th of October, must be returned within one month after.

The officer is enjoined to keep a regular debtor and creditor account of the stock of spirits, and should any excess be found it is forfeited to the crown, together with the sum of ten shillings for every gallon of such excess—if there be a deficiency, there is a forfeiture of ten shillings on every gallon so deficient, provided such decrease shall not exceed three per cent.; nor is this forfeiture to be

exacted, if the trader prove the deficiency not to have been occasioned by fraud, either practised or intended.

The liberty of warehousing spirits without payment of duty, which the act permits, is a great indulgence and accommodation, as it gives the trader the use of the money till a market offers, or till it suits his own convenience. At storing, the strength must be either 11 or 25 per cent. over proof, and the casks cannot be of less content than 100 gallons each; but by Sec. 10 of the 6th and 7th Wm. IV. c. 72., a distiller is now permitted to store casks so low as 20 gallons. A rent is required at the rate of one penny per week for every 40 gallons when placed in warehouses belonging to the crown; but, by a subsequent regulation, traders have the privilege of relieving themselves from this rent by storing the spirits on their own premises, under the look and key of the revenue. It has been suggested that it would be advantageous to the revenue, were all the spirits manufactured throughout the empire, stored in the warehouses of the crown and delivered from thence for either home or foreign consumption. By this means, no spirits could leave the distillery without the knowledge of the officer, unless by incurring a palpable risk, which, it is presumed, no respectable trader would attempt.

Spirits may be sent from Ireland to England, on payment of the difference of duties, which is 5s. 2d. per gallon; the duty in Ireland being 2s. 4d., and in England 7s. 6d. With regard to Scotland, the duty there is 3s. 4d., which nearly amounts to an interdiction of intercourse between Ireland and that country. In England, distillation may be said to be a monopoly, since it is still confined to a few capitalists, while in Scotland and Ireland it is open to every speculatist. The mode of charging the duty is, however, much the same in all parts of the empire, being regulated by the saccharometer and hydrometer, under the survey of officers. The former instrument having been already described, it only remains to give an account of the latter.

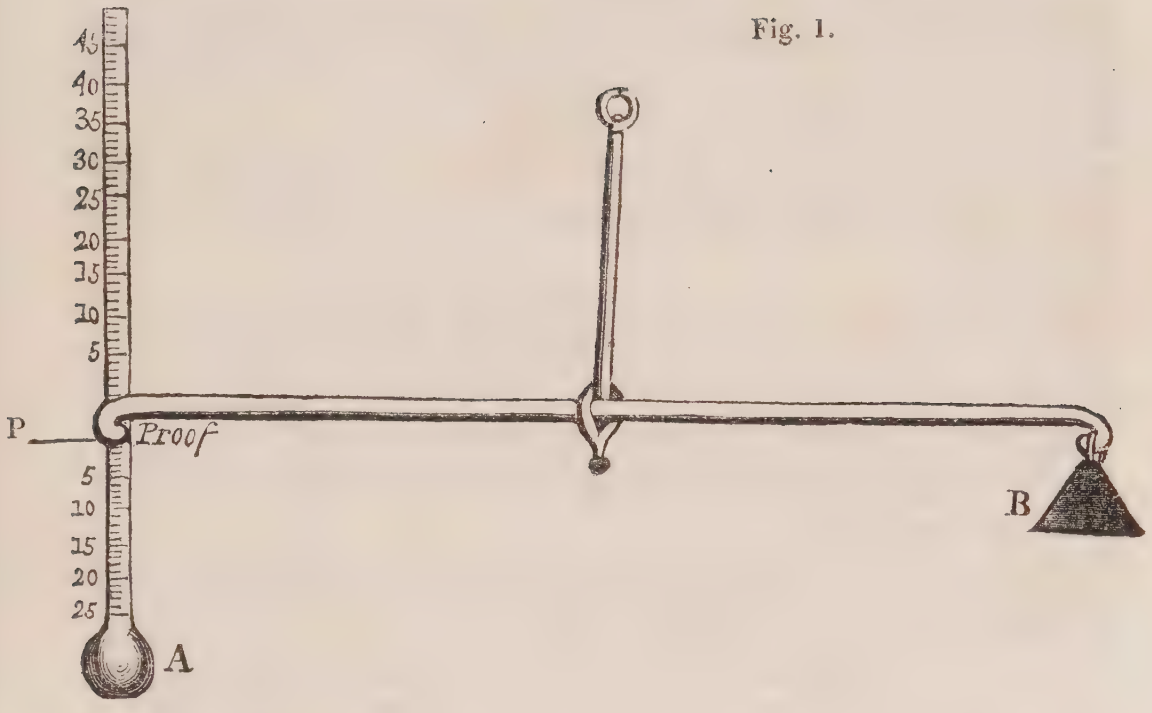
The hydrometer, as its name imports, (from ὑδωρ, *water*, and μετρον, a *measure*) is a test of the density, or gravity of water. This instrument is constructed on the principle that all bodies weigh in proportion to the quantity of gravitating matters they contain, and is merely a ready substitute for the hydrostatic balance, to which it is preferred, on account of the ease and expedition with which it can be used; for this reason it has been adopted by government to ascertain the strength of spirituous liquors. To illustrate the general principle, let water be the standard of comparison, a cubic inch of which, at 60° of Fahrenheit, weighs 1000 ounces; and since, as has been

already stated, all bodies weigh in proportion to their particles of gravitating materials, and that gold is more minute, simple, and cohesive than any other body, if it be adulterated with any other metal, its *specific* gravity, or comparative weight, must be less in proportion to the quantity of alloy with which it may be amalgamated. The weight, therefore, of gold is a sure criterion of its quality, and by experience the purity, or impurity of substances, whether solid or fluid, may be obtained. Besides, when it is said that the specific gravity of proof spirits is 923, the meaning is, that a cubic foot of the liquor will weigh exactly 923 ounces; and if the specific gravity of alcohol be reckoned as 825, it implies that a cubic foot of alcohol will weigh 825 ounces, avoirdupois. The relation which all other spirits has to this standard, or proof, is expressed by saying that they are so much *above*, or *under* proof; so when it is said, that a spirit is 25 per cent. above proof, it implies that 100 gallons of it will admit of 25 gallons to reduce it to the strength of proof; and if it be 25 per cent. *under* proof, it is considered to contain 25 gallons of water more than is contained in 100 gallons of proof spirits: in other words, *proof* spirits are a mixture of an equal quantity of water and alcohol. Hence a table might be easily formed to shew what quantity of water, or spirits, should be added to any given portion of spirits to render it true proof. From this explanation, it will be seen that the calculations made from any instrument are simple and easy of comprehension; but, for the practical application, recourse must be had to the instructions accompanying the instrument, and explanatory of the tables and sliding-rule constructed for computing the strength of spirits at different temperatures.

The following general rule may be adopted for calculating the strength of spirits, whether above or below proof, viz.:—To reduce the strength to hydrometer proof, divide the quantity by its degrees of strength, whether over or under hydrometer proof. When over proof, *add* the quotient to the quantity; if under proof, *subtract* it therefrom, which gives the quantity at hydrometer proof.

A simple method of ascertaining the *specific gravity*, and consequent commercial value of Æther, Spirits, Sulphuric, and other acids, &c., was recommended for twenty-five years by Sir James Murray, M. D. of Dublin, part of whose plan has been since adopted by Mr. Gilpin. I subjoin a representation of it which was given to me by Sir James, in 1823, when my former work was in the press.

Fig. 1.



The adoption of this principle would be important to country purchasers, who are often imposed upon when *forcing* and deleterious ingredients are mixed in spirits, to make them produce a *head*, or appear strong. An economical hydrometer can thus be furnished, which, avoiding thermometric calculations, may be understood, and used by any person.

By this plan, the spirit to be examined is brought to the one constant and uniform temperature for experiment; this is easily effected by placing a bottle of the liquor, during a few minutes, in a basin of tepid water. To those who are not supplied with a thermometer, a simple one can be supplied by an artist at a trifling expense, having a single mark engraved on it, say at 65°, to which every sample of spirit can be readily brought, and examined in a room of nearly the same temperature.

Sir James Murray has observed that where the balance is accurate and the stem, or tube, of the flask is small, a difference of a half, or even a quarter of a degree, will be apparent on the scale engraved on its neck. Half a pint, or a pint, has been the usual quantity tried. The vessel is a light, thin flask, attached to the end of a beam by a small ring of brass, fixed round the part of the stem at P, and engraved *proof*.

A is the flask, or regulator, having the degrees of the scale cut on its neck. B denotes the weight attached to the opposite end of the beam, and filed, or ground down, until it exactly counterpoises the flask containing real proof marked P.

Now, it is plain, that if the sample for trial be *stronger* than *real proof*, by which the instrument was first adjusted, it will consequently be *lighter*, and in order to counterpoise the weight B, more of the liquor must be added until the scale is balanced. The height at which the liquor stands in the stem is then to be noted, and every line, or mark, tells the number of degrees, above proof, that the spirit amounts to.

If, however, the sample be weaker than true proof, in that case less bulk will make the same weight, and every degree under the *proof-mark*, P, shews the result as so many degrees *under proof*. By these means, therefore, the different liquors are tested by a single weight, and the inconvenience and trouble of using a variety are rendered unnecessary.

Sir James Murray also recommended another method on the same principle which is very simple, (Fig. 2.)

Fig. 2.

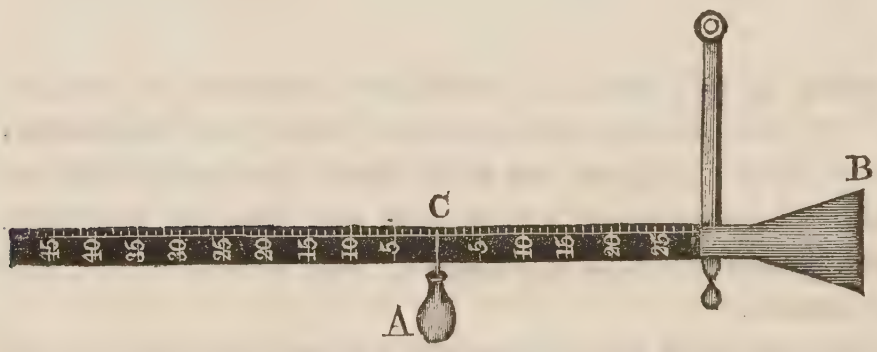


Fig. 3.

An accurate lever, or steel-yard, is furnished with a solid glass weight, B, at one end, say 20 or 30 ounces' weight; this is filed, or ground away until it counterpoises a flask A, of *true proof* spirit at 65°, accurately and completely filled up to a ground stopper—this flask is suspended by a wire, ring, or hook, in a notch cut in the beam at C, which is there marked *proof*.

Now, it is plain, that if the same flask be filled with weaker spirits at 65°, it will weigh more, and it must then be moved forward by the ring, or wire, on the arm of the steel-yard, or lever, until it is poised; and the number at which this occurs denotes the degrees of strength, *below-proof*. But if the sample be stronger than true proof, then the same vessel will not hold a similar weight, and the ring and flask must be drawn nearer to the extremity of the lever; and the line where it balances, indicates the degree, *above proof*, without the slightest trouble or inconvenience.

This, therefore, is very superior to the thousand grain bottle, because no weights, nor further calculations, are requisite. The operose small deductions or additions of Dicas and others are avoided, so that a common porter can, in a moment, use the proposed instrument.

Sir James Murray has found that proper glass rods terminating in solid glass balls for weights, are the most suitable beams, or levers. When well poised on glass balls or pivots, they are neat and accurate, and are not liable to vary, like metallic substances, from damp, friction, or oxydation.

The thermometer, (Fig. 3.) having only a single line, or degree, (65) is cheap, simple, and effectual.

Of hydrometers there are various sorts made of different materials, but Dr. Blagden is of opinion that those made of glass are the most accurate. Glass hydrometers are so subject to accidents, that metal ones have been preferred. Sykes's instrument is the one in general use, and was adopted by the act of 56 Geo. III. chap. 140, and subsequently confirmed by the 58th Geo. III. chap. 28. This hydrometer consists of a hollow ball one inch and an half in diameter, having a flat stem 3. 4 inches long, divided on both sides into ten equal parts, and each division is subdivided into five equal parts. At the other end is a small conical stem 1. 13 inches in length, having a pear-shaped bulb at its extremity. The whole instrument, which is made of brass, is 6. 7 inches long, and is accompanied with nine circular weights, numbered 10, 20, 30, 40, 50, 60, 70, 80, 90, and an additional one of a solid rectangular form, with a notch in each to fit them to the stem. The square weight is made for the summit, and the others for the conical part at the under portion of the ball. By the separate application of these weights in succession, the range of strength between pure water and alcohol is determined. Each weight is equivalent to ten principal divisions. The weight numbered 60 indicates proof at the temperature of 51° of Fahrenheit; and by the addition of the square on the top, it sinks it to the same point in distilled water of the same temperature. This square weight being just one-twelfth part of the entire weight of the whole hydrometer, together with its bottom weight, marked 60, causes the scale to shew the difference between water and proof spirit, which, the act of parliament states, must weigh $\frac{12}{13}$ of an equal bulk of distilled water. Before the invention of this instrument, much fraud was practised on the public, as there was no accurate method of enabling purchasers of spirits to detect the deceptions of unfair dealers.

The following anecdote, being in point, is worthy of preservation:

A shopkeeper at Canton, sold to the purser of a ship, a quantity of distilled spirits according to a sample shewn; but, not standing in awe of conscience, he, afterwards, in the privacy of his store-house, added a certain quantity of water to each cask. The spirit having been delivered on board, and tried by the hydrometer, was discovered

to be wanting in strength. When the vender was charged with the intended fraud, he, at first, denied it, for he knew of no human means which could have effected the discovery; but, on the exact quantity of spirits, which had been missed, being specified, a superstitious dread seized him, and having confessed his roguery, he made amends. On the instrument of his detection being afterwards shewn to him, he offered any price for what he foresaw might be turned to great account in his trade.

Having described the hydrometer, it remains only to remark that in order to ascertain exactly, the quantity of pure alcohol in any portion of the mixture of that material, M. Gay Lussac has constructed an *alcohometer*. The scale is divided into 100 degrees; each of these degrees indicates the proportion of pure alcohol contained in 100 parts of mixture. Thus, for instance, when the instrument indicates 25°, it signifies that 100 parts of the liquor submitted to proof, contain 25 of pure alchohol, and 75 of water—pure alcohol indicates 100. Pure alcohol cannot be frozen though rectified spirits may, by the rapid evaporation of sulphurous acid. According to Saussure, alcohol consists of—

Carbon	...	52.17
Oxygen	...	34.79
Hydrogen	...	13.04

being, as already observed, the constituent principles of sugar.

Although the standard specific gravity of alcohol is rated at .825, yet experimentalists have obtained it so low as .791, and at the intermediate degrees of .817, .809, .804, .799, .797, and .796. Alcohol is colourless, has a fragrant odour, and a highly pungent taste; it is very inflammable, burning with a blue flame without smoke: during its combustion, water and carbonic acid are formed, the quantity of the water exceeding that of the alcohol consumed. It combines with water in every ratio, and their union is accomplished with a considerable evolution of heat, and the bulk of the liquor is less than that of the two before their admixture. The highest rectification of this spirit is called *absolute* alcohol, from its being considered absolutely free from water; it is so very volatile that even at the density of 820, it will boil at the temperature of 176° Fahrenheit, the barometrical pressure being 30 inches. It produces considerable cold during its evaporation; in it many of the vegetable principles and essential oils are soluble; it is the only solvent of the vegetable alkali, and is of the utmost utility in the Materia Medica.

Among the various matters from which alcohol can be extracted,

potatoes* have been brought through chemical analysis to yield considerable quantities.—In conducting the process for that purpose, both in France and Great Britain, the first object is to obtain the greatest quantity of starch the potato is capable of affording. This is effected by bruising the potatoes to a pulp, then separating the starch from the dregs by means of a hair-sieve, and submitting the result to the usual process of fermentation. The preparation of starch obtained from good potatoes by French experimentalists, has been upwards of 14 cwt. of wet starch from 49 cwt. of potatoes; but the common result is from 18 to 20 per cent. of dry, or from 27 to 30 of wet starch. For a charge of 242 gallons imperial measure, from 176 to 187 lbs. of wet starch, or two-thirds of the same amount dry, are taken, thrown into a vat, and mixed with 44 gallons, or nearly half the weight of water. The mixture is then carefully stirred with rakes lest the starch should settle at the bottom; and in this state, from 110 to 132 gallons of boiling water are gradually added. The whole soon becomes thick, and is converted into a paste, or jelly. At first, it has a milky appearance, and shortly after becomes transparent, at which period it is in a proper state for undergoing the saccharine change. From 44 to 55lbs. of malt, the finer grained the better, previously softened by steeping in water are then added; ten minutes after which the material is immediately liquified, and in this state it is suffered to remain for three or four hours, during which it acquires a sensibly saccharine taste. To prepare it for fermentation, it requires a further mixture of water to make it up to about 242 gallons. To put this quantity into fermentation, nearly two quarts of good barm are considered sufficient.

Another mode of obtaining spirits from potatoes is:—Strew or spread over the bottom of a keive on which are thrown the bruised potatoes, say 883lbs. as they come from the grating machine, where they remain from a quarter to about half an hour to drain. Two workmen then commence stirring them with rakes in from 88 to 110 gallons of boiling water. The mixture soon assumes a jelly-like appearance; 55lbs. of finely-ground malt judiciously soaked are then added, and after being well agitated it is left at rest for three or four hours. All the liquor which filters through the bottom during the time, is drawn off by a cock and conducted to the fermenting tun. The mass is allowed to remain for a quarter of an hour longer, and

* This valuable root is supposed to have been introduced into Europe from Virginia (North America), but it is said to have been known, at a very early period, in Tucuman, a province of Paraguay, where potatoes are termed *camotes*, and commonly grow to the size of seven pounds and upwards.

the liquor is drawn off as before. A second quantity of water is then added, amounting to about 44 gallons, the whole is stirred, left to drain, and the liquid thus obtained, is also sent to the fermenting tun. This treatment cools the liquid considerably, but to cool and exhaust the pulp of all the fermentable matter, which it may still contain, from 44 to 66 gallons of cold water are thrown over it, which on draining through is received into the fermenting vat with the liquid extracts. By this time the pulp on the false bottom is nearly exhausted, but retains almost three-fourths of a liquid charged with fermentable matter, which may be used to feed cattle, or may undergo another draining. In the routine of these operations the fermentable liquid is gradually cooled, till, at the end of the process, it acquires a temperature very suitable to the commencement of fermentation with a specific gravity of 1.035.

To convert the starch of potatoes into a sirup, or saccharine consistence, is the first consideration in preparing it for distillation. Kirchoff, a Russian chemist, discovered, in 1811, that sulphuric acid best effected this important purpose, by diffusing a certain quantity of the starch through water rendered pungent by a suitable proportion of the acid. The mixture is then boiled for 36 hours, stirring it carefully during the first hour, to prevent its settling at the bottom. At the expiration of that time, it becomes almost entirely fluid, and only requires stirring at intervals ; accordingly, as the water evaporates, it ought to be replaced. When the liquid is sufficiently boiled, pulverized chalk is added to saturate the sulphuric acid; after cooling and settling, it possesses a sweet agreeable taste : being clarified and having evaporated to the consistence of sirup, it acquires an intense saccharine flavour and yields, on cooling, crystals of sugar. In this process, Kirchoff employed common starch, and after his experiments became public, many chemists were engaged in varying and improving the discovery. Lampadius substituted the starch of potatoes for that of wheat, and altered the process of Kirchoff in other respects, for, instead of a vessel of metal, he used one of wood heated by steam from an adjoining boiler, and conveyed through pipes descending perpendicularly to the mixture at the bottom. Sir George Tuthill put into an earthen vessel a pound and a half of potato starch, a quarter of an ounce of sulphuric acid, and six pints of distilled water at a boiling heat. These he kept stirring for thirty-eight hours, adding a supply of fresh water to keep the mixture in a degree of uniform fluidity. At the expiration of twenty-four hours, it became sweet, and increased in saccharine quality during the remainder of the process. When it had boiled for thirty-four hours an ounce of finely

pulverized charcoal was infused, and, in two hours more, some fresh lime was thrown in to saturate the acid, and the boiling was continued for half an hour longer. The liquor was then strained through calico, and the residuum, consisting of charcoal and sulphate of lime, after repeated washings by warm water, was dried, and weighed seven-eighths of an ounce. The clear fluid having settled to the consistence of sirup, was, in eight days, converted into a crystalline substance like common brown sugar, with a mixture of treacle. This saccharine matter weighed one pound and a quarter, and its qualities were considered as intermediate between those of cane and sirup. Professor De la Rive of Geneva, and M. Theodore De Saussure, by a further investigation of these results, found that during this process no gas is evolved, that the conversion proceeds equally well in close vessels, and that no portion of the sulphuric acid is decomposed. Whence it is fair to conclude, that the conversion of starch into sugar is nothing more than its combination with water in its solid state, or rather with its elements. M. Braconnot has recently extended still further our views concerning the artificial production of sugar and gum. He found that well-dried elm-dust, shreds of linen, &c. when treated with sulphuric acid (sp. gr. 1.827) and afterwards diluted with water, and the acid saturated with lime, yielded, by evaporation, a glutinous matter, which was convertible into a crystallized sugar, by further boiling with diluted sulphuric acid at 30° or 40°. Nothing can more satisfactorily illustrate the facility with which one proximate principle is convertible into another; and strange as the statement may appear to persons not familiar with chemical speculations, it is nevertheless indisputably true that a pound weight of rags can be easily converted into a pound weight of sugar,* and be distilled into spirits.

Such was the origin of the art which has been so successfully applied to France in the manufacture of spirits from potatoes; and it has rendered the saccharizing of starch by sulphuric acid, a simple and practicable branch of manufacture.

M. Zeize has stated, that a small quantity of chloride of *calcium* (oxymuriate of lime) moistened with water, added to the wash made from potatoes or grain, (the liquid being allowed to subside before it is distilled) makes the spirit produced more like brandy. It is freed, he says, from the peculiar taste of all corn-spirits, and is considered as good as the brandy made from wine. The chloride must be of the best quality, and to determine the quantity necessary to be used, a

* Paris's Elements of Medical Chemistry, p. 495.

little of the wash should be first tried with it as a test of the proportion requisite.

M. Dubrunfaut, a French chemist, in his Art of Distillation, (published at Paris in 1824,) has given the results of various experiments made by him in the saccharizing and distilling of potato starch. From 4 gallons, $3\frac{1}{4}$ pints, to $5\frac{1}{2}$ gallons imperial measure of spirits at 19° (935 sp. gr.) was the ordinary quantity obtained from 110lbs. of starch saccharized by sulphuric acid ; but it is thought that this could be considerably increased by various means, particularly by diluting and cooling the worts rapidly, as delay in this stage of the process tends to diminish the alcoholic principle.

When 221lbs. of starch are submitted to the action of sulphuric acid, $13\frac{2}{10}$ gallons of spirits of 935 degrees specific gravity are obtained. But since it is known that starch acted on by sulphuric acid, produces an equal weight of sugar, and that sugar in fermentation gives nearly half its weight of carbonic acid-gas, and the other half of pure alcohol, it is evident that this quantity is far off the actual quantity that ought to be produced; and after all the ingenuity of the chemist, what has been accomplished only proves that there is yet much to be done to perfect the process of transforming starch into alcohol.

In Sweden, an improvement in the distillation of brandy from potatoes has been lately introduced by M. Siemen of Pyrmont, who was invited to Stockholm by the government at the instance of M. Berzelius. The Danish monarch also induced him to visit Copenhagen, to communicate his plan of operations to Professor Oersted, who gave it his unqualified approbation.

The potatoes are heated by steam at high pressure above the temperature of 212°, and reduced to a fine pulp by the rotatory motion of an iron cross in the same vessel in which they are steamed. The pulp is then diluted with hot water and a little caustic potash. One pound of potash is sufficient for three or four tons of potatoes. The effect of high steam heat is to render the pulp extremely miscible with the alkaline water, so that every thing, except the skins, readily passes through a sieve. This fine pulp is speedily cooled, and it is then fit to be fermented in the ordinary mode. A great quantity of yeast is also produced during fermentation, which serves either for future operations, or for bakers' use. M. Siemen states the product of spirit by his process to be more than one-third greater than is obtained by the common method, which amounts to 13 quarts from a ton of potatoes. In the experiments made, under the personal inspection of Professor Oersted, at Copenhagen, from $16\frac{1}{2}$ to 17 quarts of spirits at

50° of Tralles' alcohometer, were obtained from a ton of potatoes, making a fair allowance for that portion of the product due to the malt used in the maceration. This spirit is stated to have a good flavour, though the produce is inferior to that obtained by the French chemists. In an article in De Thaer's Annals of Agriculture, M. Müller asserts that an apparatus on Siemen's principle, costing from 200 to 250 Prussian dollars, is capable of producing 50 per cent. more of of spirit from potatoes than the apparatus generally used in Germany, calculating from the price and produce of potatoes and rye in 1820. M. Müller declares that 100 tons of the former converted into spirits would produce a profit of from 500 to 600 rix-dollars, while the same space of ground that produced them, if sown with rye, would not give more than from ten to twelve rix-dollars.

About the year 1832, a gentleman visited the distillery of Messrs. Calder, at Eyemouth, in Berwickshire, and found that they had worked for some short time from potatoes. He considered the spirits, (which had the flavour of Hollands,) to be pure and good, and although it was affirmed that no grain or malt had been used, he strongly suspected the contrary. The fermentation was described as beautiful, the head rising seven or eight feet like clouds of cotton; and when beaten down to the surface of the worts, it rose again in the same majestic manner. The gravity worked at was 40° and the attenuation was good. The potatoes were ground in a mill, like a common pepper-mill in shape, but made of sheet-iron perforated like a grater. The pulp, thus produced, was mashed in the keive or mash-tun, with water of a high degree of temperature, say boiling, from which the worts ran off pure and freely. A spurge, or small worts of about 20° gravity, was obliged to be used, otherwise the worts at the noticed gravity of 40° could not be got off: the produce was good as there was no deficiency. The spirits were sent to the London market, and so long as they were called "*grain spirits*" in the permits, they were highly prized; but when this error was corrected, and they were denominated spirits "*distilled from potatoes,*" the price fell and they were not so much sought after. About the same time, Mr. Jamieson, of Fairfield, near Enniscorthy, commenced distilling from potatoes. They were sliced, dried on a corn-kiln, ground to flour, mixed in certain proportions with corn, and mashed in the ordinary manner. But the manufacture was abandoned in consequence of the opposition of the peasantry, through fear of a scarcity and dearth in the article. From some late experiments of M. Dubrunfaut, he proposed to brew from the starch of potatoes an excellent beverage resembling French beer, the starch being ma-

cerated and fermented with hops. By fermenting the saccharized starch with honey instead of hops, a palatable liquor was made, having all the qualities of Louvaine beer. Potato starch being free from any peculiar taste, seems capable of receiving flavour in fermentation from any substance that gives repute to our beer, or home-made wines. Dr. Hare, having observed a strong analogy between the saccharine matter of the sweet potato and molasses, or the *saccharum* of malt, boiled a wort made from the potatoes, of 1060° specific gravity, with a proportionate quantity of hops for the space of two hours. It was then cooled to about 56°, and yeast added. As far as could be judged, the phenomena of the fermentation and the liquor produced, were precisely the same as if malt had been used. The wort was kept in a warm place until the temperature was 85° Fahrenheit; and the fall of the head showed the attenuation to be sufficient. Yeast subsequently rose, which was removed by skimming. A further quantity of yeast was precipitated by refrigeration, from which the liquor being decanted, became tolerably fine for new beer, and resembled, in flavour, ale made from malt. It has been computed, that five bushels of potatoes would produce as much wort as three bushels of malt, while the residue, as food for cattle, would be worth half as much as the potatoes employed.

In the opinion of some, (particularly those who have not employed sulphuric acid in the saccharizing of starch,) the best time to use potatoes in distillation is in spring, when they begin to vegetate. The growth of the buds must be checked as in the process of malting; and this is easily done by spreading them on a floor, and by subsequent turning, so as to deprive them of as much of their aqueous matter as possible. When reduced to a pulpy consistence, diluted with boiling water, and drawn off and cooled to a proper temperature, the liquid is then fermented in the same manner as grain worts; and such has been the treatment observed by many, who have tried the distillation of potatoes in this country. Sprouted potatoes produce as perfect farina in July as in December, and equal in quantity to what they would have yielded earlier in the season, being, according to Sir John Sinclair, about 14lbs. per cwt.

In Prussia, it is very common to cultivate potatoes for the manufacture of starch and treacle. The treacle is found to be very profitable, and though not possessing so much consistence as that imported from the West Indies, yet it is not inferior in sweetness, and can be sold to the consumers at a more reasonable rate.

In the Journal of Arts, it is stated that potato apples yield, by proper treatment, as much alchohol as an equal quantity of grapes

when bruised and fermented with one eighteenth or one-twentieth part of their weight of yeast.*

From these details on the application of potatoes in the manufacture of spirits, persons may be induced to try experiments that might ultimately prove advantageous. If they proceed by the reduction of the farina to a pulpy substance, the operation is simply by boiling; if by the reduction to starch, it may be mechanically effected, at little expense and labour, either by pounding, or grating, and elutriation with cold water. To saccharize the starch, from one to two parts of sulphuric acid, are considered sufficient for every hundred parts of starch, when the heat applied is above 212°; a period of two or three hours is thought sufficient to produce crystallized sugar: the heat in this process is best communicated in a wooden vessel by means of steam.

Besides the spirit which can be extracted from potatoes, beet-root, or mangel-wurzel, has latterly become an article of attention for the same object; but whether its extensive cultivation for this purpose might be advantageous, sufficient experiments have not been tried in this country, to enable a correct judgment to be formed. The Act of the 2d and 3d Wm. IV. chap. 74, and not the 4th Wm. IV., as quoted in the note page 549, (which received the royal assent on the 1st August, 1832,) specially provides for the distillation from this article, without any admixture of malt, or other grain; but there is a manifest anomaly in confining the distillation to the mere extract of the root, to the exclusion of other ingredients, which might be beneficial in the process.

In France, the distillation of this article has been followed with considerable success, by several experienced chemists, and the produce is good; but it is from the molasses, after the extraction of the sugar, that the spirit is drawn.†

The beet-root is first well cleansed and rasped into a pulpy state, the sugar is extracted, and the residue, or molasses, is fermented in the usual way, but it has been found serviceable to add a mixture of ground malt, which gives force and strength to the fermentation, rendering it more complete, and producing a spirit of greater body and more palatable flavour. With a cylindrical screw, or hydraulic press, from 70 to 80 per cent. of juice has been procured; and this liquid, when yeast is applied under a proper temperature, soon begins to ferment, and rapidly undergoes the necessary

* Journal of Arts for 1819, Art. 18.

† Margraff, the Prussian chemist, first procured sugar from the white beet in 1747.

attenuation for the still. Sulphuric acid, it is stated, has, in some instances, been added with effect to the solution of treacle and water in the fermenting-back; but this is highly questionable, and is in opposition to the principles of vinous fermentation.

A distillery was lately fitted up at Battersea for the distillation of beet-root. The wooden still employed was from 6 to 700 gallons' content, and was worked by steam pipes passing through the wash. The process observed there was simple, the roots were sliced, and the juice was squeezed out by a hydraulic press. The fermentation proved uncertain, owing, no doubt, to the want of malt; some of the backs not commencing to work for many days, and stopping when half attenuated; others commencing early and fermenting better; but none of them attenuating below 5°. The spirit was coarse and impure, and the produce did not exceed two-thirds of the noticed gravity.

To speculate, therefore, on the distillation of beet-root as a profitable branch of manufacture, would prove, it is to be feared, (as the law now stands) a hazardous enterprise; and the more so as the Act of the 1st Victoria, chap. 57, has imposed a duty on the sugar extracted from that vegetable.

Mr. Hercules Bradshaw, an enterprising gentleman of Hillsborough, in the county of Down, who cultivated the beet-root to a very considerable extent, established a manufactory for extracting sugar from it. Samples of good sugar were produced, and the manufacture of the article was so promising as to induce many of the farmers in the vicinity to speculate largely in the cultivation of the root, the more particularly from having a ready market convenient. It is probable (had not the law interfered,) that Mr. Bradshaw would have succeeded to the full extent of his expectations, as the result of his experiments was highly satisfactory.

Within these few years, it was found, that in making bread in which barm was employed, a portion of alchohol was generated, by means of what has been termed the *panary* fermentation. To collect this spirit which was lost in the oven, Mr. R. Hicks, of London, was amongst the foremost in contriving an oven and apparatus for preserving the alchohol thus evolved. The oven, for which he obtained a patent in 1830, is made of metal, having a floor of bricks in the bottom, with doors to shut perfectly air tight; whilst a pipe is attached to the top of the oven, through which the vapour ascends, and is condensed below in a common worm. By this mode, it was stated, that from every 4lbs. of bread, from half an ounce to an ounce

of proof spirits was obtained, and that the bread was considered greatly superior to that made in the common manner. The Lords of the Treasury, considering this invention of much importance to the revenue, authorized, by a warrant dated 16th May, 1831, the Commissioners of Excise to permit the use of this apparatus, under such regulations as might be thought necessary for the security of the revenue. Accordingly, it has been directed, that "on application being made for such permission, the party be required to make entry and take out license as a distiller, and maker of low-wines and spirits; and to enter into bond with a sufficient surety or sureties, in £500 for the due performance of the conditions, on which the apparatus is to be used."

Mr. Smith, of the Thames Bank Distillery, to effect the same object, used for an oven, a circular vessel of cast iron, about 8 feet in diameter, by 18 inches in height, having its bottom covered with tiles to prevent the bread from being scorched by the iron: the heat was communicated by means of fire on a revolving furnace placed beneath. In the top of the oven was a circular opening about 18 inches in diameter, with a head and worm attached in the manner of the common still. When the oven was heated to the proper temperature, the bread was put in and the door securely closed. The vapour from the bread ascended into the worm, where it was condensed, and passed into a small receiver in the form of low wines. Its strength was about 87.5 per cent under proof, or equal to 12½ per cent proof spirits, and which, of course, required re-distillation by means of a still to render it marketable.

This oven baked 60 quartern loaves at a time, producing ¾ of an ounce of proof spirits for each loaf, or 45 ounces for the whole batch, being nearly the third of a gallon, and it was expected that from each loaf, an ounce might be obtained. Several ovens on similar principles have been tried, but without that success which would warrant their continuation for any useful or profitable purpose.

The process of rectifying spirits is a matter worthy of attention, as it is one of the chief means of correcting the taste and flavour of spirituous liquors: it would require, however, to do justice to the subject, a disquisition of some length to detail the various methods resorted to, for the accomplishment of this object. While rectification serves to concentrate alchohol, and deprive it of the essential oils and acids, by which raw or plain spirits are distinguished, it prepares them for the acquisition of any flavour, which the rectifier may be desirous of producing.

This branch of trade is, by a late law, greatly simplified. Before a rectifier can obtain a license which costs ten pounds, he must make an entry of his premises and utensils. He must have a still containing 120 gallons imperial measure in the body, independent of the head, but is at liberty to have as many larger or smaller as he pleases. The officer keeps an account of all the raw or plain spirits received by permit, and twelve hours before the commencement of work, a notice is served on him, when he attends and unlocks the furnace door, which had been previously secured to prevent operations. The still being charged with $\frac{7}{8}$ of its contents, (which is ascertained by dip), the aperture through which this is effected, is secured by a lock, while during the course of the work, the officer makes two visits, one to inspect the progress and the other to show the still off, when the furnace door is again locked, if the trader should cease to work, or the still is recharged if the work is to continue. A general stock of the concern is taken every 42 days at least, or oftener if the officer considers it expedient, on which an occasional check is kept by the Supervisor; but if a decrease be found in a greater proportion than five gallons to every hundred, a penalty is incurred. In Ireland, the business of a rectifier is confined to the manufacture of spirits of wine, cordials, and liqueurs, with imitations of brandy, rum, and geneva, and forms but a small branch of trade; while in England, all raw spirits are modified and sent into consumption through the means of the rectifiers, in the form, or under the name of *British* compounds.

In 1835, there were in England 108 rectifiers; in Scotland, 11; and in Ireland, 20. The chief grievance which the persons in this trade have to complain of (particularly in Scotland and Ireland) is the prohibition against the exportation of their manufacture. By the act of the 6th and 7th Wm. IV. c. 72, countervailing duties were imposed on certain compounds, tinctures, and medicated spirits on their removal from Ireland to England, or Scotland, or from Scotland to England, but as the articles enumerated in the schedule, form but a limited portion of the manufacture of the trade, the rectifiers are, in no respect, benefited by its provisions. And hence the business of rectification must continue to present few inducements to persons of capital and enterprise to embark in it, until a change in the law will offer a reciprocity of intercourse and advantage.

The lowness of price obtained for the plainer article, prevents, for the most part, any efforts to improve the description of liquors coming through the hands of these traders, as well as the exertions

of scientific men, if better encouragement were given, to introduce improvements into the present system of work. If the cultivation of native fruits and the making of wine therefrom were more particularly attended to, an excellent brandy (subject to a moderate duty), might be produced to the exclusion of the foreign commodity, a great portion of which is made from grain and cider. The consumption of sugar in the making of these wines, would, there is little doubt, counterbalance the loss of duty on the foreign brandy.

Having given an ample detail of the various intoxicating beverages, and other exhilarating substances used in the different countries of the world, and having presented a full explanation of the most improved practice of brewing and distillation, I shall take leave of the subject by making a few observations on the effect, which the inordinate use of spirits may be supposed to produce on the population of the empire, illustrated by details of its influence on man from the earliest records of history.

Whether, as previously alluded to, drunkenness had any effect in contributing to the destruction of mankind by the deluge, it would be impossible to determine ; but we have seen that Noah proved himself to have been no stranger to its evil consequences. The vice of Lot and his daughters is a melancholy instance of its baneful influence. To irregularity occasioned by intoxication, many important events, revolutions, and occurrences are to be attributed. Babylon fell through its delusive effects, for while revelry, banqueting, and inordinate excesses were going on, the enemy were enabled to take advantage of the indiscretions of the hour, and to destroy the boast and glory of a mighty and powerful empire. Alexander, who sighed because he had not another world to conquer, fell a victim to the direful potency of wine ; maddened by its influence, Persepolis was destroyed through the instigation of Thais, and Alexander himself prematurely sunk under the pressure of an inordinate debauch. His mighty empire crumbled into atoms, leaving its vestiges as the fragments of a stupendous edifice erected by the power of a gigantic mind, and destroyed by the same influence, through the wantonness of a drunken frolic. The Romans, it is well known, after a siege of three years, could not reduce the city of Syracuse, owing chiefly to the talents of Archimedes, till the celebration of a feast of Bacchus had rendered the inhabitants so incapable of exertion, that Marcellus, the Roman general, taking advantage of the irregularity, entered the city in triumph, and made captives of a people, whom he could not have subdued had they not yielded to the temptations of excessive drinking.

Lycurgus, king of Thrace, finding his subjects addicted to this vice, proscribed the cultivation of the *vine*, and established agriculture in its stead.

Its influence over the Persians and other Orientalists, as well as amongst the rude and barbarous African tribes, it would be tedious to recapitulate ; ample testimony has been given of its pernicious consequences on the aborigines of the American continent, while its frightful demoralizing power has been lamentably exemplified throughout the vast expanse of the Polynesian and Australasian islands.

To recount the numerous fatal instances occasioned by drunkenness which history exhibits, would not only exceed the limits of this work, but afford ample materials for a volume.

Throughout Europe, a taste for intoxicating beverages prevails less or more in different regions. In the wine countries, although this disposition may be carried to great length, yet the effects are less visible than in those parts where ardent spirits is the predominant liquor. This is easily accounted for, when it is known that the alcoholic or intoxicating principle is in wine combined with other ingredients which diminish its influence on the human frame ; but in spirits it is collected and uncombined with other materials by which its activity on the system is the more powerful and enervating. Irishmen have the reputation of being more generally prone to the use of spirituous liquors than their neighbours, and the national character has been tarnished in consequence. So far back as the time of Henry VIII., we find that the legislature warmly exerted itself in the suppression of this vice, while an Irish parliament under Elizabeth was equally intent on checking its destructive ascendancy. But it does not appear that any encouragement was given to the substitution of ale for spirits ; hence the inclination of the population was never diverted from the native beverage, but allowed to take root and spread with the increase of every succeeding generation. The force of habit is powerful, and daily experience shews what it is capable of effecting, even in the use of tobacco—a weed which imparts less vigour to the body or pleasure to the mind, than the talismanic enchantment derived from the elixir of the bottle.

To the peculiar circumstances of the country, involved as it has been, from an early period, in foreign and domestic broils, combined with the want of education and of regular employment, a love of company, the hospitable and social habits of the people, together with a number of festive and holy-days, (all so many scenes of revelry and intemperance), may be attributed the influence and hold which the

use of intoxicating liquors has obtained over the lower orders of the Irish.

In France, Spain, and Italy, where wine and brandy are in the greatest abundance, and within the reach of the lowest class of the people, drunkenness is not so prevalent, and forms but a small portion of the errors of the day. From this it might be inferred that there are fewer excitements to excess in drinking, when the article can be purchased at a moderate rate, than when it is made a source of temptation by a heavy duty, and rendered a luxury by the difficulty of its attainment. The evil effects of illicit distillation corroborate this assumption, as contraband trade with a consequent disregard for the laws, has been always the result of laying an impost on any article beyond the ability of the consumer to purchase. "Surely (says Playfair) it would be well to take some mode to prevent the facility with which people get intoxicated, and the temptation that exists to do so. The great number of public-houses and the way in which they give credit, are undoubtedly, in part, causes of this evil. It would be easy to lessen the number without hurting liberty, and it would be no injustice if publicans were prevented from legal recovery for beer or spirits consumed in their houses on credit. There could be no hardship in this, and it might tend to produce a great reformation in the manners of the lower orders."* The facilities for obtaining beer and spirits in the empire may be seen by an inspection of the enumeration of the licensed houses for the retail of those articles, according to the returns of 1837 :—

England,... 45,394
Scotland,.....17,026
Ireland,..... 33,729

Besides these, there are numerous spirit-grocers, who sell so low as a glass not to be consumed on the premises, as well as innumerable *shebeen* and private houses in every quarter of the country, vending, for the most part, a spurious and adulterated article.†

The consumption of spirits of all sorts on which the duty was paid for 1836, amounted in the three kingdoms to 31,402,417 gallons.

To counteract the evil consequences of drinking to excess, *Temperance Societies* have been formed in several parts of Great Britain, (the first established in Ireland being in 1829,) which are now in active operation, disseminating their principles among all classes of the

* Decline and Fall of Nations, 4to. p. 226.

† See the last Table of the Addenda for the consumption of spirits for a series of years.

community. In speaking of these societies, it may not be irrelevant to remark, that while they are calculated to do much good, a want of union amongst the members must prove injurious to the great object that all should have in view.

Some carry their notions of abstinence to great length, even denying the use of every thing that has undergone the fermenting process, (not reflecting that the juice of the grape contains, in its *simple state*, all the elements of alcohol;) while others are not so fastidious, and allow the moderate use of wine and malt liquors. Without, however, attempting to draw a line of demarcation between them, it is to be feared, no matter how influential example may be, that unless some reward, token of approbation, or substitute be given, the nominal term of *Temperance*, or the mere pledge of any individual, will have little effect in producing any substantial reform amongst the lower classes. It has, therefore, been considered, that were those who have given testimony of their reformation, assisted in their respective avocations or pursuits of life, by the patronage of the superior classes of society, or by the distribution of honorary distinctions, or pecuniary rewards, it would induce numbers to abandon their irregular habits, enrol themselves as Temperance members, and would finally lead to the comfort and happiness of thousands of families. In England, it is said that there are above 300,000 Temperance advocates, and an equal number in Ireland and Scotland—a gratifying statement to the friends of religion and tranquillity. And it is to be hoped that this virtuous example will be successfully followed throughout the British empire, and in every nation where man is debased by the brutality of drunkenness. The Spartans used to shew to young persons their serfs or Helots in a state of intoxication, in order to make them detest the crime of inebriety, and were a similar mode of exemplary exposure practised in every part of the world, it might have its influence in rendering the vice more odious and contemptible.

Even the poor Indians hold intoxication in abhorrence, accounting it a species of madness; and the word, which in their language signifies a drunkard, is also the term for a maniac. To what shameful extravagance the love of strong liquors led the Athenians in their bacchanalian festivals, is well known to every classical reader. So much were the Romans disgusted with the obscenity of these orgies, that they suppressed them by a decree of the Senate. But, although their prudence led them to reprobate those scandalous acts of wantonness and folly, many of their governors ran into riotous excesses at the public expense, and without regard to the laws of decency or decorum. An extra-

vagant instance of this description is exemplified in the intoxicated frenzy of Nero, whose banqueting hall (styled *Domus Aurea*), exhibited every mark of voluptuousness and debauchery. This building was so constructed, that the ceiling, partitions, and other compartments had a rotatory motion, similar to that of the celestial bodies, shewing the different seasons of the year, and letting fall on the heads of the bacchanalian votaries, at each revolution, showers of essences, flowers, and perfumes, to delight the senses; while the most costly wines were dealt about with an unsparing profusion, to infatuate the mind and excite the passions. The conduct of Nero was not more remarkable for its extravagance and folly than that of Aurelius Antoninus, (surnamed Heliogabalus,) who, after plunging into the vortex of every dissipation, so far degraded himself as to invite the lowest and most abandoned of his subjects to his banquets; while the infatuated propensities of Caligula led him to feed his horse with gilt barley, and cause the animal to drink wine with him out of a golden cup.

The vice of drunkenness has tended to degrade man more than any of the other weaknesses, to which human nature is prone. It is well remarked in the Guardian, when personifying the follies of life, "that drunkenness was the only vice that did not change the face of its possessor into that of another creature; but this is to be taken far from a privilege, for these two reasons: because it sufficiently deforms them of itself, and because none of the lower rank of beings is guilty of so foolish an intemperance."* "A drunken man," says Addison, "is a greater monster than any that is to be found among all the creatures that God has made, as indeed there is no character which appears more despicable in the eyes of all reasonable persons. Bonosus, one of our own countrymen, who was addicted to this vice, having set up for a share in the Roman empire, and being defeated in a great battle, hanged himself. When he was seen by the army in this melancholy situation, notwithstanding he had behaved himself very bravely, the common jest was, that the thing they saw hanging upon the tree before them was not a man but a bottle."† The Scythians abhorred the Bacchanalian feasts of the Greeks, because they thought it was unreasonable to suppose that a God should drive men into all the violent transports of madness which drinking produces. The Lacedæmonians had no notion of drinking for pleasure, and they not only accounted drunkenness infamous, but severely punished those who were detected in such criminality. On returning from their public

* Guardian, No. 56. † Spectator, No. 569.

meals, no persons were allowed torches or lights, because it was expected that men who were perfectly sober should be able to find their way in the dark. A law was enacted by Pittacus, king of Lesbos, that "he who committed a crime when drunk, should receive a double punishment"—one for the crime itself, and the other for the inebriety which prompted him to commit it.

Paley observes, that " the guilt of any action in a drunken man bears the same proportion to the guilt of the like action in a sober man, that the probability of its being the consequence of drunkenness bears to absolute certainty." The British laws consider drunkenness an aggravation, not an excuse for criminal behaviour, and have provided, that he, who is guilty of any crime through his own voluntary drunkenness, shall be punished for it as if he had been sober. The offence is punishable either in the ecclesiastical courts, or by a justice of the peace according to the statute. It is even a sufficient cause to remove a magistrate himself from office.

By the laws still in force,* if any person shall be convicted of drunkenness before a magistrate, he must forfeit five shillings for the first offence, or sit six hours in the stocks; and for the second offence, he must enter into a bond with two sureties in £10 each, to be of good behaviour, or be committed: our late enactment is but a modification of those.

In the time of the Commonwealth, the magistrates of Newcastle-on-Tyne punished drunkards by making them carry a tub, which they called the *drunkard's cloak*. A hole was made in the bottom, (which was turned upwards), to admit the head of the delinquent to pass through, and two smaller ones were perforated in the sides for the hands. This he was obliged to carry in the open streets, so long as the magistrates chose, exposed to the contempt and ridicule of the people.

The sacred writers observe, that " Wine is a mocker, strong drink is raging; and whosoever is deceived thereby is not wise.† " Be not among wine-bibbers; among riotous eaters of flesh—for the drunkard and the glutton shall come to poverty.‡ Who hath woe? Who hath sorrow? Who hath contentions? Who hath babbling? Who hath wounds without cause? Who hath redness of eyes?" " They that tarry long at the wine; they that go to seek mixed wine. Look not thou upon wine, when it is red, when it giveth his colour in the cup; when it moveth itself aright—at the last it biteth like a serpent, and stingeth

* Jac. I. c. 5—21. Jac. I. 47. † Prov. xx. 1. ‡ Ibid. xxiii. 20, 21.

like an adder."* " Woe unto them that rise up early in the morning, that they may follow strong drink, that continue until night, till wine inflame them! And the harp and the viol, the tabret and pipe, and wine, are in their feasts: but they regard not the work of the Lord, neither consider the operation of his hands. Woe unto them that are mighty to drink wine, and men of strength to mingle strong drink."†

These quotations so strongly express the evil consequences of drunkenness, that commentary on them is almost unnecessary; yet, it may be stated:—

1st, That this frailty is an enemy to the common concerns of life, as well as to those of futurity, since it expels from men's minds all reverence to God, and respect for man, and excites to the gratification of every base and inordinate inclination.

2d, That while it produces but a momentary pleasure, it engenders a lasting regret, so that it has been justly said of it, that it works like so much poison, and is difficult to cure as the biting of a serpent.

The pernicious effects of drunkenness are thus beautifully expressed by Prior:—

> Unhappy man, whom sorrow thus and rage
> To different ills alternately engage;
> Who drinks, alas! but to forget, nor sees
> That melancholy sloth, severe disease,
> Memory confused, an interrupted thought,
> Death's harbingers, lie latent in the draught;
> And in the flowers, that wreathe a sparkling bowl,
> Fell adders hiss, and poisonous serpents roll.

The destructive influence of intoxication is too familiar to require much further illustration; extravagance, anger, and lasciviousness follow in its train; the duties of life are neglected by the derangement of the faculties and the consequent incapacity and stupefaction which it occasions; while the expense it incurs, robs society of its legitimate support, and the unhappiness it produces, tends to shorten life, and embitter the last moments of existence.

The waste of property which a habit of continual drinking produces, will appear monstrous, when it is certain that many men consume at least a bottle of wine daily; and, taking that at an average of 2s. 6d. the bottle, this, would, in twenty years, amount to £912. 10s.—a sum which, if properly applied, would be the means

* Prov. xxiii. 29. 30. 31. 32. † Isaiah v. 11. 12. 22.

of meliorating the condition of many a helpless widow and orphan. If, amongst the lower orders, spirits and ale be taken into consideration as the common beverages; and allowing to each individual a consumption of three pence a-day, this would come to £4. 11s. 3d. annually, or £91. 5s. in twenty years. This though comparatively small, and far under the actual outlay, is so enormous that when applied to the aggregate population of Great Britain and Ireland, (upwards of twenty-four millions,) estimating at fifteen millions of drinkers, the whole would shew a sum of £68,437,500 annually, or £1,368,750,000 in twenty years.

That the excessive use of inebriating liquors is productive of incalculable evil to the community at large, is a truth, which not even the drunkard himself, in his sober moments, would be disposed to deny. Were we to examine the prisons, bridewells, houses of correction, penitentiaries, lunatic asylums, and other places of incarceration, we should find a vast number of the inmates of those abodes of human degradation to have been the victims of vice and folly, through the inordinate use of intoxicating liquors; while the numerous paupers that unhappily throng every city, town, and village, may owe their misery, in a great measure, to the same desolating cause. But while the abuse of ardent spirits and intoxicating beverages of all kinds is to be lamented, yet it is urged by some, that a moderate and salutary use of them is not to be condemned, as they have been found beneficial on various occasions, have added to the comforts of life, and heightened the enjoyments of society when kept within the bounds of reason and propriety. And they further allege, that the invention of spirituous liquors is no more to be attributed to an evil propensity in man, than any other invention or discovery, which has been productive of the best consequences: the evil, they assert, lies in the excess of the application—the good in the restriction. So that if man debases himself by an immoderate use of any of the bounties of nature, that is no condemnation of their value and importance. It is an aphorism in China, that "the drunkard's fault is not the wine's, but his own." True! for had he abstained from the wine, the fault would not have occurred.

It was customary among the ancient Egyptians, in order to prevent excesses at festivals, or other entertainments, to bring into company the figure of a corpse, to remind the guests of mortality, and the slender thread on which life existed, as well as the necessity for temperance and moderation in their enjoyments.

Montesquieu is of opinion, that drunkenness predominates throughout the world in proportion to the coldness of the climate or the

distance from the equator towards the pole, and that the law of Mahomet was one of climate suited to that of Arabia, as the law mentioned by Plato, Aristotle, and Eusebius, (which forbade the Carthaginians to drink wine,) was a law of a similar description.

Ample testimony of the melancholy effects of drunkenness may be found on reference to the minutes of evidence taken before the Committee of the House of Commons, which was appointed in June, 1834, to inquire into the extent, causes, and consequences of intemperance among the labouring classes of the United Kingdom. Before this Committee were laid scenes of the most appalling nature, arising from the habitual and excessive use of ardent spirits, and it appeared that most, if not all, of the desperate atrocities which had been committed were chiefly owing to its influence. It is worthy of remark, that during the Irish rebellion in 1798, there was one-fourth of a greater proportion of spirits used than in either of the two preceding or succeeding years. It has been estimated that in England, four-fifths of all the crimes in the country have been committed under the excitement of inebriating liquors. During the year 1832, there were taken into custody by the London police, 32,636 persons for drunkenness alone, not including any of the numerous cases in which assaults, or more serious offences, had been committed under the influence of drink. This statement relates merely to the suburbs of London, without any of the numerous cases that occurred in the city itself. It is, moreover, alleged, that more than one-half of the insanity amongst the population is occasioned by inebriety—of 405 patients admitted into a lunatic asylum, at Liverpool, 257 were known to have lost their reason by this vice.

From the preceding facts and observations, it must be obvious that the assumption, which has been urged by some, of a high duty on spirits leading to excess in its indulgence, is contrary to experience and actual practice. Yet it cannot be affirmed, that to the operation of a low duty, the great bulk of the irregularities which take place, is to be attributed. It is not in the management of distillery-laws, or their adaptation to the suppression of smuggling, either in public or private distilleries, that we are to look for the causes, which have produced in Ireland those acts of wickedness and bloodshed, that have so much disgraced the character of a country yielding to no other in fertility of soil, in beauty of scenery, or in the valour and ingenuity of its inhabitants. By a more general diffusion of knowledge, the inculcation of sound religious principles, and a complete participation in all those privileges, which the union with Great

Britain must ultimately produce, aided by the meliorating hand of time, and an impartial administration of the laws, the character of the Irish may be rescued from the imputations, which, in some instances, have been wantonly, and, in others, but too justly cast upon it.

The establishment of manufactories—the encouragement of industry—the opening of markets in remote districts—the draining of bogs—the cultivation of waste lands—the formation of canals connecting our great lakes and navigable rivers—and the construction of railroads, effecting a more ready communication with the populous cities, towns, and villages, together with a judicious and well-managed poor-law, would tend much to the improvement of the people; and by thus giving them employment, serve to eradicate many of those causes of discontent, which have too long proved destructive to the happiness and prosperity of the empire.—Besides the advantages which these various sources of improvement would introduce, they would be the means of elevating the mind, and raising man to a more dignified station in the scale of his being. He would look around him with more complacency and satisfaction on his fellow-mortals, who, with himself, would be in the enjoyment of those comforts, which habits of industry, united to religious practices, necessarily produce.

ADDENDA.

ADDENDA.

A Tabular View of the Opium Trade of Great Britain, including that of our India Settlements, with China :—[see page 136.]

Years.	Great Britain.				Exported from India to China.
	Imported.	Exported.	Retained for consumption.	Revenue at 9s. per lb.	
	lbs.	lbs.	lbs.	£	Chests.
1823	38,375	11,016	20,985	9,509	5,172
1824	87,142	40,309	22,752	10,199	8,080
1825	123,084	64,466	20,582	9,329	8,055
1826	79,829	49,776	28,329	11,348	10,743
1827	113,140	87,333	17,322	7,894	8,865
1828	84,186	95,739	20,680	6,483	11,111
1829	48,634	41,919	23,970	4,522	11,409
1830	209,076	170,080	22,608	4,528	15,643
1831	9,967	25,045	25,937	5,187	20,108
1832	68,378	19,562	30,258	6,052	15,823
1833	106,846	53,001	35,407	7,088	21,279
1834	48,216	31,604	28,467	5,700	20,213
1835	85,481	74,126	31,181	6,249	21,350

Table of the quantities of Arrack exported from Ceylon, as noticed in page 182 :—

Years.	To Great Britain.	To British Colonies.	To foreign States	Value.	
	Gallons.	Leaguers.	Gallons.	£	s.
1833	7,593	3,250	...	12,425	9
1834	6,156	2,022	98	7,737	16

The duty on Batavia arrack, in 1826, was 4s. 6d.; in 1827, 7s. 6d.; 1828-9, the same; 1830, 5s.; 1831, 4s. 6d.; 1832, 4s. 6d.; 1833, 4s. 3d. The duty charged, in 1834, on the importation of this commodity into Great Britain from the East Indies, was 15s. per gallon, and 9s. from the Colonies; and on other foreign arrack, £1. 2s. 6d.

Exports from the Mauritius, vide page 190 :—

Years.	Colonial Rum.	Brandy & Geneva	Colonial cordials.	Arrack	Wine.
	Gallons.	Gallons.	Gallons.	Galls.	Galls.
1833	55,569	5,964	331	43,874	6,107
1834	24,625	9,827	746	7,770	12,675

Table of the Exports from Great Britain to the East Indies and China, alluded to in pages 163 and 231 :—

Years.	Ale & Beer. Tuns.	Rum. Proof gallons.	Brandy. Proof gallons.	Geneva. Proof gallons.	Wines. Gallons.
1829	4,202	11,431	141,714	21,711	354,424
1830	3,424	8,931	74,994	15,040	235,905
1831	3,097	14,886	92,614	19,428	198,942
1832	4,709	33,444	146,258	27,657	331,713
1833	4,046	12,460	112,826	30,001	326,190
1834	3,044	3,919	234,478	35,459	314,393
1835	3,619	5,046	239,364	34,967	300,618

An Account of the Wine imported into Great Britain from the Cape of Good Hope, referred to in page 274 :—

YEARS.		IMPERIAL GALLONS.
1821	...	532,614
1822	...	565,490
1823	...	843,172
1824	..	591,078
1825	...	746,925
1826	...	356,070
1827	...	742,811
1828	...	758,538
1829	...	966,367
1830	...	544,335
1831	..	427,823
1832	...	278,057
1833	...	454,202
1834	...	483,996
1835		587,748

Exports from the United Kingdom to the Cape :—

	1827.	1828.	1829.	1830.	1831.	1832.	1833.	1834.
Beer & Ale in tuns.	138	99	48	68	62	112	174	90
Wine in gallons. .	8,933	26,993	23,843	13,131	6,190	7,952	9,089	17,458
Spirits do.	39,949	119499	46,073	62,739	36,112	35,307	52,392	82,583

Rum exported from the West Indies, (in proof gallons,) as alluded to in page 286 :—

	1829.	1830.	1833.	1834.
Antigua	116,794	155,514	72,680	112,594
Barbadoes	1,554	2,357	5,329	24,532
Bahamas	4	.....	4,000	1,797
Berbice.....	201,362	234,618	137,750	160,078
Bermudas.....	.....	2,987	55,420	17,239
Demerara.....	1,693,004	1,859,710	1,716,525	1,915,240
Dominica	31,853	36,321	44,097	46,090
Grenada.....	394,289	298,933	603,544	715,713
Jamaica	3,532,823	3,213,503	3,463,997	3,583,861
Montserrat, ...	39,815	49,075	52,910	54,125
Nevis	45,971	51,243	35,410	52,633
St. Christopher	176,807	219,706	78,394	125,420
St. Lucia	38,113	12,817	13,505	6,357
St. Vincent ...	275,373	173,262	269,072	278,785
Tobago	370,733	428,810	299,758	314,205
Tortola	206	.....	25,660	22,193
Trinidad	16,058	12,941	11,710	8,567

A table of Distilleries and Breweries in the United States, as mentioned at page 325 :—

States.	Number of stills.	Galls. of Spirits from Grain, Fruit, Molasses, &c.	Brew-eries.	Quantity of Beer, &c.
Massachusetts.....	60	3,012,510	...	24,400 barrels
New Hampshire.....	...	20,560	...	135,950 gallons
Vermont	...	173,285	...	...
Rhode Island.....	...	1,193,398	...	75 barls. of currant
New-York.....	591	1,828,339	42	.. [wine
Connecticut.....	560	1,374,404	...	..
New Jersey.....	...	1,102,272	...	2,170 galls. beer
Pennsylvania.....	3,594	6,552,284	48	71,275 gls. per day
Delaware.....	51	27,600	2	476 barrels
Maryland	400	860,742	7	9,330 do.
Virginia.....	...	2,367,589	...	4,251 do.
Ohio.....	343	1,000,000	13	...
Indiana.....	28	22,073	...	96 do.
Kentucky.....	2,000	2,220,775	...	...
Tenessee.....	...	801,245	...	...
North Carolina.....	...	1,886,691	...	...
South Carolina.....	...	436,853	...	...
Georgia.....	126	545,212	1	1,878 do.
Mississippi Territory	6	...	...	...
Illinois Territory.....	...	10,200	...	...
Michigan Territory..	..	20,400	...	1,500 do. cider

Exports of wine from the Canaries to Great Britain, as alluded to in page 358:—

YEARS.	IMPERIAL GALLONS.	YEARS.	IMPERIAL GALLONS.
1820	... 269,970	1828	... 107,919
1821	... 225,015	1829	... 80,808
1822	... 204,123	1830	... 83,822
1823	... 169,312	1831	... 105,875
1824	... 247,494	1832	... 97,269
1825	... 254,278	1833	... 233,730
1826	... 273,558	1834	... 214,861
1827	... 417,703	1835	... 211,707

The imports of Wine from Madeira into Great Britain, as mentioned in page 361:—

YEARS.	IMPERIAL GALLONS.	YEARS.	IMPERIAL GALLONS.
1820	... 554,011	1828	... 452,509
1821	... 513,328	1829	... 320,580
1822	... 443,008	1830	... 304,726
1823	... 463,548	1831	... 356,514
1824	... 495,194	1832	... 288,783
1825	... 543,133	1833	... 301,057
1826	... 577,378	1834	... 372,698
1827	... 308,546	1835	... 204,825

The exports of Wine and Brandy from Spain into Great Britain, as alluded to in page 368:—

YEARS.	WINE. Imp. gallons.	YEARS.	WINE. Imperial gallons.	BRANDY. Imperial gallons.
1820	979,128	1828	3,188,357	4,582
1821	1,001,883	1829	2,841,031	1
1822	1,278,506	1830	2,505,438	32,179
1823	1,618,632	1831	2,605,328	69,319
1824	2,083,206	1832	2,446,050	4,389
1825	2,754,873	1833	3,368,530	178,067
1826	2,364,573	1834	3,446,563	61,640
1827	2,433,141	1835	2,732,028	15,880

The duty on wine is 5s. 6d., and on brandy, £1. 2s. 6d. per Imperial proof gallon.

Exports of Wine from Portugal to Great Britain, as alluded to in page 380:—

YEARS.	IMPERIAL GALLONS.	YEARS.	IMPERIAL GALLONS.
1820	2,457,410	1828	3,985,146
1821	2,752,392	1829	2,398,803
1822	3,283,907	1830	2,603,113
1823	2,991,350	1831	2,763,211
1824	2,625,249	1832	2,116,245
1825	4,952,126	1833	2,226,733
1826	3,114,050	1834	3,941,402
1827	3,311,135	1835	4,269,890

Exports of Wine from France into Great Britain, as referred to in page 403:—

YEARS.	WINE. Imperial gallons.	YEARS.	WINE. Imperial gallons.
1820	239,566	1828	550,949
1821	240,146	1829	498,320
1822	269,353	1830	352,136
1823	329,509	1831	351,102
1824	276,105	1832	311,448
1825	1,083,538	1833	275,366
1826	489,657	1834	363,376
1827	384,208	1835	370,446

View of the produce of Wines in the Ionian Islands, and the extent of the trade carried on with the United Kingdom in Inebriating Liquors:—(Vide page 408.)

Islands.	Produce of wine in barrels.	Price per Barrel	Trade with the Islands collectively.					
			Years	Imported.		Beer & Ale.	Exported.	
				Wine.	Spirits.		Wine.	Spirits.
		s. d.				Tuns.	galls.	galls.
Corfu.....	88,964	8 4	1828	1,294	19,790	66	671	...
Cephalonia..	45,730	12 6	1829	1,577	6,563	36	124	...
Zante.....	63,730	10 0	1830	2,464	18,461	81	1444	18
Santa Maura	62,292	5 0	1831	224	16,084	62	898	6
Ithaca.....	9,045	8 2	1832	604	17,430	17	382	...
Cerigo.....	36,200	8 4	1833	1,898	16,728	40	747	...
Paxo.....	861	13 0	1834	1,262	15,233	41	920	996

The imports and exports of Turkey, the Morea, and the Greek islands, as mentioned in page 423:—

Years.	Wine exported from Turkey.	Spirits imported into Turkey.	Wine imported into Turkey.	Beer and Ale.
	gallons.	gallons.	gallons.	Tuns.
1827	292	12,802	2,801	22
1828	528	3,948	2,114	23
1829	1,180	19,857	1,904	52
1830	1,492	10,656	3,070	81
1831	666	14,671	1,648	34
1832	566	54,390	4,602	20
1833	794	11,968	7,656	47
1834	5,754	101,068	2,524	39

The Austrian, Hungarian, Rhenish, and other liquors imported into Great Britain, as referred to in page 442:—

Years.	IMPERIAL GALLONS.			Years.	IMPERIAL GALLONS.		
	Wine.	Brandy	Geneva.		Wine.	Brandy.	Geneva.
1820	32,881	...	...	1828	92,325	294	35,971
1821	27,828	...	...	1829	85,858	56	27,024
1822	29,200	...	...	1830	70,660	239	12,201
1823	26,332	...	...	1831	71,352	209	2,509
1824	27,666	...	...	1832	60,568	4	28,070
1825	146,346	...	...	1833	54,361	1,175	93,537
1826	86,023	...	...	1834	58,376	2,735	61,193
1827	80,734	544	16,798	1835	52,075	40	37,269

Geneva imported from Holland into Great Britain, as alluded to in page 455:—

Years.	Proof gallons.	Years.	Proof gallons.
1827	281,900	1832	228,219
1828	335,424	1833	311,452
1829	142,988	1834	228,386
1830	204,787	1835	217,115
1831	210,038	1836	220,317

The juniper-berry, which forms a constituent part in the manufacture of gin, has been found growing wild in the Western portion of Ireland, and were its culture properly attended to, it might be furnished in such quantities as to obviate the necessity of foreign supplies.

Imports and Exports of Liquors in the undermentioned ports of Prussia, as referred to in page 464 :—

Imports, in Centners of 113½lbs. each.						Exports.			
						Brandy.	Wine spirits		Spruce Beer.
	Years	Brandy Rum and Arrack.	Wine.	Malt Liquors.	Beer.	Centners.		Eimers.	Kegs.
Dantzic.....	1834	5,008	11,126	3,135	...	...	...	2616	16,170
Do.	1835	4,142	22,401	2,335	...	...	...	2205	30,871
Konigsberg,	1834	1,811	54	3,623	...	...	...	...	...
Do.	1835	859	11,725	2,716	...	...	...	...	...
Stetten.....	1834	11,010	85,200	13,543	2400	133642	360	...	...
Do.	1835	11,057	99,276	11,057	1830	18679	216	...	...

Trade in Spirits, Wines, &c. between Great Britain and Denmark, as mentioned in note page 470 :—

Imports from Denmark, in gallons.					Exports to Denmark.				
Years	Rum.	Brandy.	Geneva.	Wines.	Rum.	Brandy.	Geneva	Wines.	Beer & Ale in tuns.
1827	3	93	94	85,006	41,655	3188	119	5,302	18
1828	...	2	...	14,202	38,959	2875	...	5,801	17
1829	...	...	2054	23	12,282	4927	6	6,102	14
1830	...	...	1	...	19,342	2520	99	3,825	14
1831	...	...	...	110	25,217	2443	60	5,313	8
1832	...	6	10	35	64,422	1671	62	5,141	29
1833	...	100	897	156	20,915	1194	...	6,912	7
1834	8	8	...	345	18,203	1290	...	23,971	7

Trade in Spirits and Wines between Great Britain and Sweden, as mentioned in page 481 :—

Years	Imports from Sweden, in galls.				Exports to Sweden, in galls.			
	Rum.	Brandy.	Geneva	Wines.	Rum.	Brandy.	Geneva.	Wines.
1827	...	...	.	49	16,222	391	...	5967
1828	...	...	...	...	10,331	20	...	5210
1829	...	...	...	3	15,998	532	...	2822
1830	...	...	...	...	12,341	448	...	1004
1831	..	...	...	...	7,895	410	9	5872
1832	...	...	...	3,291	14,342	336	100	3390
1833	63	21	2	285	7,640	1138	21	6806
1834	109	35	...	6	14,421	387	231	4022

Tables of the Ale and Beer brewed in England for certain periods, as referred to in page 532 :—

Year.	James II.		Year.	William III.	
	Strong Beer.	Small Beer.		Strong Beer.	Small Beer.
	Barrels.	Barrels.		Barrels.	Barrels.
1684	4,384,093	1,933,924	1689	5,134,309	2,707,726
1685	4,654,564	2,102,021	1690	4,690,711	2,645,656
1686	4,780,097	2,255,062	1691	4,669,544	2,374,731
1687	5,044,311	2,435,169	1692	3,796,805	2,378,642
1688	4,989,000	2,543,856	1693	3,529,498	2,385,996

Year.	Anne.		Year.	George I.	
	Strong Beer.	Small Beer.		Strong Beer.	Small Beer.
	Barrels.	Barrels.		Barrels.	Barrels.
1708	3,756,920	2,295,008	1721	3,935,717	2,315,737
1709	3,540,031	2,215,883	1722	3,982,066	2,320,118
1710	3,391,799	2,113,862	1723	4,049,091	2,389,248
1711	3,336,286	2,106,970	1724	4,075,871	2,465,695
1712	3,306,696	2,049,313	1725	3,997,249	2,327,351

Year.	George II.		Year.	George III. and IV.	
	Strong Beer.	Small Beer.		Strong Beer.	Small Beer.
	Barrels.	Barrels.		Barrels.	Barrels.
1746	3,592,800	2,161,600	1818	5,572,505	1,504,165
1747	3,774,400	2,136,200	1819	5,895,705	1,568,797
1748	3,885,800	2,204,200	1820	5,650,850	1,523,825
1749	3,913,100	2,132,700	1821	5,811,455	1,530,027
1750	3,851,800	2,178,000	1822	6,018,618	1,530,189

George IV. and William IV.					
Year.	Strong Beer.	Small Beer.	Year.	Strong Beer.	Small Beer.
	Barrels.	Barrels.		Barrels.	Barrels.
1823	6,512,645	1,716,395	1827	6,507,929	1,791,364
1824	6,774,938	1,799,664	1828	6,677,933	1,840,489
1825	7,142,046	1,877,094	1829	6,060,247	1,665,351
1826	6,812,131	1,882,695	1830	3,645,594	1,286,107

The number of stills and their contents, with their scale of work, as mentioned in page 632:—

		Dublin.		Cork.		Rest of Ireland.	
		No.	Contents.	No.	Contents.	No.	Contents.
Years	1798	44	39,523	12	13,892	154	64,562
	1799	37	34,372	12	13,892	127	52,690
	1800	32	29,154	11	12,998	122	47,602
	1801	32	29,136	7	7,046	85	32,553
	1802	31	33,911	7	7,971	66	33,720
	1803	32	29,797	7	7,971	81	42,141
	1804	28	24,446	10	11,334	77	45,050
	1805	26	22,323	10	11,378	54	31,605
	1806	15	11,871	7	6,981	29	18,046

Size of Still.	Charges required. Monthly.	Spirits required Weekly.
Gallons.		Gallons.
500	74	3,237
750	74	4,856
1,000	72	6,300
1,250	66	7,218
1,500	64	8,400
1,750	62	9,493

A table of the stills that were at work in Ireland, in the month of February, 1818, as alluded to at page 633:—

Names.	Residence.	Size of stills.	Monthly charges.	Spirits produced weekly.	Average consumption of coals weekly.
		Gals.		Gals.	Tons
Jameson and Dewar	Dublin	1510	135	17,836	300
John Jameson ...	... ...	1256	143	15,715	280
Robert Haig ...	... ...	1250	143	15,640	280
James Jameson ...	... ...	1002	154	13,501	260
Nicholas Roe ...	... ...	751	172	11,300	240
John Power ...	... ...	751	172	11,300	240
John Morrogh ...	Cork	1021	154	13,756	260
William Wyse ...	... ...	501	189	8,285	220
Samuel Perrott ...	... ...	500	189	8,268	220
P. W. Callaghan ...	... ...	500	189	8,268	220
John Brown ...	Limerick ...	501	189	8,285	220
Ditto	...	501	189	8,285	220
George Connell ...	...	206	272	4,902	150
James Shaw ...	Belfast	503	189	8,306	220
Robert Thomson ...	Newry	509	189	8,417	220
Malcolm Brown ...	Dundalk ...	500	189	8,268	220
Andrew Stein ...	Clonmell ...	500	189	8,268	220
John Birch	Roscrea	306	174½	4,666	Turf
John Cassidy ...	Monasterevan	200	194⅓	3,400	Do.
James Mullaniff ...	Longford ...	100	200	1,750	80
Holton & O'Beirne	Athlone ...	101	217½	1,919	Turf
Robert Hackett ...	Birr	101	217½	1,919	Do.
John Robinson ...	... ...	101	217½	1,919	Do.
Robert Codd ..	Drogheda ...	101	304	2,682	100
John Thomson ...	Carrickfergus	99	200	1,732	80
John Falls	Dungannon ...	98	200	1,715	80
Michael Regan ...	Galway	98	200	1,715	80
Alexander Stewart	Londonderry	94	200	1,645	80
D. and A. M'Intyre	Killether ...	77	200	1,347	60
Patrick Brennan ...	Kilkenny ...	100	200	1,750	80
Bartholomew Finn	Galway	53	200	927	40
William Cathers ...	Newtonlimavady	49	200	857	40
William Leatham ...	Buncrana ...	49	200	857	40
Total gallons of spirits made weekly with the coals used.....				209411	4750

The extent of the trade in spirits, wine, and malt liquors in Ireland, as noticed in page 707 :—

FIRST PART.

	SPIRITS.		WINE.	ALE AND BEER.		
Years.	Distilled.	Imported.	Imported.	Brewed.	Imported.	Exported.
	Gallons.	Gallons.	Gallons.	Barrels.	Barrels.	Barrels.
1719	173,564	323,124	1,111,726	601,457	299	6,408
20	136,075	327,082	1,386,293	574,687	292	6,164
21	131,299	292,125	940,147	546,256	393	6,093
22	125,280	388,007	1,143,752	535,756	244	6,328
23	133,773	379,601	1,007,632	545,586	273	5,878
24	132,642	415,062	1,227,315	568,768	246	5,636
25	134,080	327,194	1,172,678	564,234	163	4,791
26	169,211	346,360	1,313,319	540,628	266	4,427
27	218,936	411,622	1,425,352	548,862	355	4,080
28	155,283	464,222	1,260,297	514,845	424	4,144
29	129,309	409,544	1,521,085	455,761	470	4,646
30	134,738	538,316	1,246,238	455,102	1,059	4,384
31	174,791	336,922	957,420	500,707	1,362	6,048
32	184,028	221,682	1,294,459	532,960	983	5,883
33	225,871	375,227	1,145,653	516,438	770	5,331
34	268,349	396,474	1,134,979	522,877	455	5,100
35	209,045	383,301	1,170,845	463,829	705	6,258
36	195,738	627,690	1,255,227	441,132	1,157	5,365
37	228,807	605,723	911,400	451,185	1,349	3,707
38	216,785	404,092	1,324,869	488,421	1,057	3,870
39	211,038	531,878	1,122,796	496,401	1,159	3,612
40	239,811	472,758	1,154,807	478,869	1,989	2,392
41	248,276	382,841	1,167,907	455,844	5,278	3,253
42	272,238	662,741	759,398	456,602	9,464	5,618
43	354,166	566,131	1,087,656	542,840	1,323	2,578
44	402,272	385,650	754,655	601,246	1,937	3,572
45	452,315	290,288	1,046,235	561,546	3,899	3,958
46	334,415	411,362	596,688	503,294	4,914	3,758
47	402,075	489,388	506,762	486,259	14,552	4,490
48	531,443	333,919	1,328,932	550,898	8,255	4,686
49	565,383	538,097	1,016,599	583,155	11,895	3,866
50	598,546	820,843	2,080,690	605,465	12,655	6,217
51	598,179	967,655	1,396,196	601,649	14,018	4,737
52	596,090	786,639	1,126,823	625,399	21,274	6,461
53	623,334	1,165,085	1,029,672	592,348	20,477	5,573
54	561,230	1,473,380	2,014,509	587,322	20,054	4,663
55	498,304	919,133	1,779,639	556,581	16,840	4,431
56	479,861	1,239,997	1,183,003	539,346	13,572	4,312
57	404,460	746,517	746,009	489,825	10,949	3,566
58	399,793	842,515	691,477	449,738	15,228	4,125
59	107,543	1,285,665	1,368,118	501,902	16,557	3,882
60	225,217	742,623	1,713,556	545,558	13,500	4,899
61	432,130	956,101	905,971	588,217	18,837	4,923
62	692,875	1,390,632	1,522,137	618,399	18,008	4,908
63	668,487	1,273,674	1,338,797	618,208	22,099	4,259
64	661,215	1,742,309	1,313,450	622,658	28,935	5,031
65	715,475	2,141,415	1,777,086	578,068	27,788	4,926
66	649,396	2,216,709	1,678,064	568,884	32,441	5,353
67	354,964	2,577,057	1,566,101	565,332	29,488	4,139
68	657,637	2,744,289	1,592,634	522,344	40,542	4,231
69	831,114	2,789,361	1,583,421	529,499	45,452	3,596
70	801,174	2,396,396	1,519,707	501,562	38,440	3,995
71	734,253	2,675,131	1,392,672	439,863	44,105	3,216

SECOND PART.

Years	SPIRITS. Distilled.	Imported.	Exported Irish.	Exported Foreign.	WINE. Imported.	Exported.	ALE AND BEER. Brewed.	Imported	Exported
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Barrels.	Barrels.	Barls
1772	758,788	2,566,835	–	131,769	1,308,972	12,600	433,160	47,736	2,491
73	959,881	2,213,394	63	40,788	1,555,291	9,576	447,330	58,675	2,944
74	1,026,124	2,072,527	–	–	22,741	1,571,802	11,592	461,035	51,995	2,307
75	980,401	1,799,123	267	18,066	1,287,903	10,584	465,207	53,906	1,976
76	1,160,341	2,445,204	–	–	20,308	1,279,330	9,072	458,460	66,954	1,990
77	1,115,352	2,297,704	–	–	73,077	1,293,127	8,820	472,840	71,797	1,343
78	1,127,112	1,605,375	–	–	10,053	1,088,546	6,804	478,902	70,369	1,261
79	1,094,026	1,451,994	10	19,009	707,490	3,276	437,812	48,274	998
80	1,229,416	1,069,535	–	–	1,577	1,017,654	4,788	429,200	40,459	412
81	1,787,298	594,748	3,966	25,898	1,269,082	10,837	485,826	54,365	719
82	2,076,855	776,477	1,456	886	992,702	7,308	503,492	63,495	1,006
83	1,771,513	864,787	1,185	76,993	931,593	13,608	452,098	54,456	1,253
84	1,436,502	1,763,600	230	14,761	1,079,405	13,356	388,027	54,251	2,084
85	1,450,415	1,459,677	–	–	15,763	1,151,270	14,868	361,903	48,381	2,054
86	1,849,449	1,501,451	70	29,040	836,806	12,600	383,400	55,282	1,727
87	1,960,418	1,292,385	579	44,835	986,656	27,259	395,087	68,492	2,285
88	2,229,663	1,387,585	68	21,350	1,564,803	8,316	412,137	74,725	1,298
89	2,801,429	1,459,236	152	8,541	1,306,707	11,592	389,318	91,009	1,122
90	2,926,795	1,472,822	408	5,345	1,436,030	16,884	434,397	109,049	1,372
91	3,508,244	1,208,195	–	–	9,242	1,553,272	25,532	467,436	101,655	1,452
92	3,520,082	836,482	299	47,948	1,574,893	55,692	531,648	125,058	1,677
93	3,436,440	708,560	429	34,579	1,468,449	44,352	590,307	125,057	495
94	3,936,355	451,316	135	4,081	1,132,642	25,704	535,359	76,255	809
95	4,262,036	610,809	1,011	8,997	1,492,525	32,760	521,822	72,393	1,076
96	3,704,681	317,941	1,216	6,655	3,209,041	33,920	528,686	58,738	2,611
97	3,867,174	143,080	58,615	15,204	1,308,875	33,920	567,284	67,188	797
98	4,783,954	84,581	2,866	10,053	363,052	21,672	600,038	50,914	1,149
99	4,253,187	136,085	4,055	7,614	1,802,619	41,076	545,806	25,178	1,631
1800	3,621,498	393,783	3,152	13,994	2,788,699	57,456	449,790	19,709	444
1	1,565,380	1,319,717	2,270	691	1,210,349	67,032	398,746	17,972	363
2	5,237,195	1,951,931	227,519	242,478	1,493,205	125,643	402,942	10,495	2,108
3	4,807,143	1,257,135	1,130,019	259,724	2,441,932	65,772	561,438	9,884	5,782
4	4,713,736	454,219	930,800	80,963	1,860,257	53,676	695,100	3,209	6,775
5	4,612,335	319,357	1,196,569	117,988	1,994,846	40,572	770,688	3,143	9,707
6	4,648,772	210,034	1,044,548	32,703	1,226,732	104,580	760,371	2,160	5,797
7	5,641,060	352,078	531,648	61,583	1,289,162	154,476	750,307	2,449	4 510
8	2,006,837	467,057	648,706	24,872	2,424,065	79,632	751,146	2,188	4,630
9	233,750	1,052,968	512,098	70,996	1,753,978	160,272	960,300	1,708	5,713
10	6,412,625	1,758,321	76,990	209,665	1,670,818	174,384		1,101	4,098
11	7,088,566	746,017	136,955	512,653	1,372,341	274,428		1,378	5,393
12	1,462,948	532,344	793,140	148,184	542,101	169,848		528	8,727
13	4,667,559	1,057,390	411,843	166,533	1,471,428	224,532		338	6,266
14	5,666,825	664,990	144,351	545,212	1,198,764	331,884		215	6,814
15	4,615,405	405,187	942,038	213,953	891,828	410,760		173	8,022
16	4,821,358	285,708	580,559	175,824	1,050,840	149,436		220	8,556
17	3,100,386	71,527	196,268	67,083	639,620	194,040		163	5,480
18	4,473,016	163,811	48,260	95,329	491,652	216,468		194	1,153
19	3,968,269	45,477	43,833	20,792	779,688	272,160		162	679
20	4,636,192	108,439	236,713	59,764	843,696	80,136		317	4,128
21	4,230,377	67,213	516,885	34,485	858,728	111,888		235	3,185
22	4,318,012	69,751	415,912	43,111	696,276	68,544		– –	5,483
23	4,135,045	45,884	656,979	14,152	690,228	57,456		– –	6,096

Since the year 1809 no account has been kept of the quantity brewed.

Trade of Ireland in Wine and Spirits for the following years, partly in continuation of the foregoing table :—

Years.	Spirits in gallons.			Gallons of wine retained for consumption.
	Distilled.	Exported.	Paid duty on Foreign & Colonial.	
1824	2,844,677	899	29,010	567,573
1825	6,360,411	11,421	25,260	955,278
1826	8,833,863	15,788	43,457	687,263
1827	9,046,959	56,801	10,805	692,140
1828	7,283,317	8,637	14,678	789,832
1829	9,725,259	6,718	37,210	850,680
1830	9,208,538	12,651	32,419	757,674
1831	8,694,742	15,146	34,487	757,381
1832	8,731,101	28,396	31,636	766,339
1833	9,172,725	28,695	28,417	795,250
1834	9,459,160	...	27,150	...
1835	9,307,448	...	...	...
1836	11,076,272	...	...	...
1837	11,809,603	...	...	...

Quantities of all sorts of Wine, as well as of Foreign and Colonial Spirits consumed in the United Kingdom, with the amount of revenue thereon :—[vide page 707.]

Years.	Wine in Imperial gallons.	Amount of duty.	Spirits in Imperial gallons.	Amount of duty.
		£		£
1820	4,586,485	1,989,817	3,446,460	2,776,750
1821	4,686,885	2,006,498	3,337,715	2,732,323
1822	4,606,999	1,982,882	3,347,343	2,767,538
1823	4,845,060	2,088,232	3,540,338	2,941,767
1824	5,030,091	2,153,112	3,869,317	3,096,838
1825	8,009,542	934,665	3,505,273	2,874,042
1826	6,058,443	1,424,326	5,855,090	3,551,548
1827	6,826,361	1,600,587	4,661,762	2,935,662
1828	7,162,376	1,700,051	4,658,332	2,942,912
1829	6,217,652	1,473,546	4,722,991	2,946,939
1830	6,434,445	1,524,168	4,975,728	3,078,017
1831	6,212,264	1,535,484	4,892,795	3,054,448
1832	5,600,291	1,715,812	5,171,144	3,427,783
1833	6,207,770	1,633,830	4,879,967	3,130,657
1834	6,480,544	1,705,520	4,765,349	3,100,669
1835	6,420,342	1,691,508	4,765,706	3,047,359

A view of the Trade of Great Britain with several of the States of the American continent :—

Years.	Gallons of all sorts Imported.			Galls. of all sorts Exported.	
	Spirits.	Wine.	Beer, &c. Tuns.	Spirits.	Wine.
			UNITED STATES.		
1827	108,119	31,418	449	1,181	602
1828	79,344	90,342	379	1,018	3,779
1829	50,262	71,149	335	7	4,649
1830	53,913	67,014	307	9,443	2,325
1831	126,299	83,235	311	172	6,629
1832	73,205	91,147	398	2	1,236
1833	77,670	184,035	514	3,557	1,133
1834	105,902	133,534	464	1,871	7,772
			MEXICO.		
1827	5,705	9,217	14	...	...
1828	8,673	9,289	13	3	49
1829	...	...	14	...	...
1830	1,008	23,751	21	3	32
1831	772	2,180	21	...	461
1832	1,712	5,721	8	...	53
1833	4,085	2,473	26	13	61
1834	303	2,443	11	...	12
			COLUMBIA.		
1827	1,000	1,566	21	2	2
1828	4,743	1,784	23	...	6,219
1829	5,794	588	7	...	118
1830	1,680	190	6	29	...
1831	1,119	450	15	...	...
1832	4,895	2,050	15	...	...
1833	1,439	772	4	1	159
1834	985	3,345	22	...	55
			BRAZIL.		
1827	12,533	114,008	381	24	11,106
1828	17,980	135,685	436	3	4,515
1829	13,717	59,948	397	1,085	1,817
1830	9,470	13,062	560	17	1,462
1831	7,145	10,299	315	5	2,915
1832	14,741	27,358	257	6	1,398
1833	10,238	25,633	467	3	1,421
1834	13,662	19,744	606	3	895
			RIO DE LA PLATA.		
1827	2,900	19,298	21	...	...
1828	5,600	17,584	64	...	...
1829	5,602	14,481	76	...	102
1830	16,749	7,193	112	...	214
1831	905	1,960	54	2	1,013
1832	1,644	8,464	78	12	22
1833	5,753	7,836	103	...	...
1834	20,687	18,906	74	150	599

[*Continued in next page.*

Years	Spirits.	Wine.	Beer, &c. Tuns.	Spirits.	Wine.
			CHILI.		
1827	5,335	5,356	11	215	3
1828	15,483	9,613	24	...	20
1829	6,125	4,189	12	...	141
1830	5,959	2,905	7	6	1,479
1831	6,413	5,597	8	5	22
1832	6,363	10,952	7	...	...
1833	6,058	13,047	14	...	114
1834	27,865	13,485	23	6	30
			PERU.		
1827	11,265	6,483	6	...	...
1823	11,477	9,900	19	...	23
1829	4,662	1,818	6	...	50
1830	11,179	7,112	5	...	11
1831	6,163	5,487	8	...	3
1832	6,453	4,339	14	2	1
1833	5,921	10,823	20	...	23
1834	16,222	10,007	14	3	3

Tables showing the rates of duties on spirits, as imposed by acts of Parliament in different years, with the quantity on which duty was paid, together with the number of licensed distillers working during those years.

Years.	England.		Scotland.			Ireland.		Paid duty for consumption.		
	Distillers.	Duty per gallon.	Distillers.	Low-lands. Duty per gal.	High-lands. of still cont.	Distillers.	Per gal.	England.	Scotland.	Ireland.
		s. d.		£ s. d.	£ s. d.		s. d.	£	£	£
1791	-	3 $4\frac{3}{4}$	–	3 12 0	1 4 0	230	1 $1\frac{1}{4}$	4,072,735	—	3,416,766
1794	-	3 $10\frac{3}{4}$	–	10 16 $0\frac{1}{2}$	1 16 0	165	—	4,594,793	—	4,153,785
1795	-	4 $4\frac{1}{2}$	–	—	—	199	1 $5\frac{1}{4}$	4,711,640	—	3,612,083
1797	-	4 $10\frac{1}{4}$	–	64 16 4	3 0 0	210	—	2,808,948	—	4,694 254
1798	-	—	–	—	7 16 $0\frac{1}{4}$	176	1 11	3,630,872	—	4,173,439
1799	-	—	87	per gallon spirits.		165	2 $4\frac{1}{4}$	4,114,936	1,670,388	3,553,594
1800	-	5 $4\frac{1}{4}$	55	—	—	124	—	4,335,550	775,750	275,013
1802	-		84	3 $10\frac{1}{2}$	3 $4\frac{1}{4}$	120	2 $10\frac{1}{4}$	3,464,380	1,158,558	4,715,098
1803	-	8 $0\frac{1}{2}$	88	—	—	115	3 $6\frac{1}{4}$	5,353,309	2,022,409	4,343,095
1804	19	—	66	5 $9\frac{3}{4}$	5 $0\frac{1}{2}$	90	4 1	3,678,679	1,889,757	3,543,599
1807	16	—	76	5 $8\frac{3}{4}$	4 $11\frac{1}{4}$	45	—	4,741,939	2,653,478	5,597,2 4
1810	16	—	36	—	—	27	2 $6\frac{1}{2}$	4,787,555	1,748,140	4,630,675
1811	17	10 $2\frac{3}{4}$	62	8 $0\frac{1}{4}$	6 $7\frac{1}{2}$	32	—	4,776,330	1,581,524	6,378,479
1812	18	—	36	—	—	35	5 $1\frac{1}{4}$	3,622,970	1,318,115	4,009,301
1813	18	—	24	—	—	32	5 $7\frac{1}{4}$	4,292,477	1,234,291	1,809,849
1815		—	37	9 $4\frac{1}{2}$	9 $4\frac{1}{2}$	34	6 $1\frac{1}{2}$	5,468,987	1,591,148	4,323,844
1816	16	—	36	—	—	36	5 $7\frac{1}{4}$	4,745,484	918,859	3,557,200
1817	12	—	107	6 2	6 2	36	—	4,133,063	1,906,950	3,586,932
1819	12	11 $8\frac{1}{4}$	147	—	—	38	—	4,146,505	2,125,150	3,676,516
1823	10	—	111	2 $4\frac{3}{4}$	2 $4\frac{3}{4}$	36	2 $4\frac{3}{4}$	3,803,812	2,303,286	3,590,376
1826	18	7 0	263	2 10	2 10	83	2 10	7,407,204	3,988,788	6,837,408
1830	18	7 6	249	3 4	3 4	82	3 4	7,732,101	6,007,631	9,004,539
1831	18	—	240	—	—	85	—	7,434,047	5,700,689	8,710,672
1832	13	—	233	—	—	90	—	7,281,900	5,405,439	8,657,756
1833	12	—	243	—	—	90	—	7,717,303	5,988,556	8,168,596
1834	12	—	–	—	—	–	2 4	7,644,301	6,045,043	9,708,416
1835	12	—	–	—	—	–	—	7,315,053	6,013,932	11381223
1836	12	—		—	—	–	—	7,558,889	6,025,844	1180000

In reference to the Act of the 3d and 4th Philip and Mary, passed at Drogheda in 1556, and quoted in page 610, it appears from the 5th Jac. I. that this act was inefficient for the purpose, and that a grant was made on the 23d March, 1607, to Walter Taillor of Dungurey, county Galway, empowering him to recommend persons to the Lord Deputy to be licensed for the distillation of *aqua-vitæ*, within the province of Connaught, and none were to be licensed but through his certificate. After a month's notice of this grant to Taillor, if any should be found distilling without his nomination, their property became forfeited to him for his sole use and benefit. Besides, he had liberty for seven years to distil in any place, town, or village in the province, and to make, or cause to be made *aqua-vitæ*, *usquebaugh*, and *aqua compositæ*, as he might think fit, and to sell the same in any part of Ireland, he might choose, paying the crown rent of £40. Irish, per annum.

A similar grant for seven years, was made to Sir Thomas Phillips, Knt. for the county of Colrane, (now Colerain) otherwise called O'Cahane's country, or within the territory or country called the Rowte, county Antrim; rent, 13s. 4d. Irish.

Another license was, on the 23d March, 1608, granted to George Sexton, gent. for seven years, for the province of Leinster; rent, 5s. Irish.

A similar license was granted, on the 10th January, 1608, for seven years, to Charles Waterhouse, gent. for the whole province of Munster; rent, 6s. 8d. Irish.

In virtue of these grants, innumerable licenses were issued to divers persons to make and sell *aqua-vitæ*, &c. throughout Ireland, until the 18th of May, 1620, when that privilege was withdrawn, in consequence of complaints of the indulgence being confined to a few individuals. A grant was made, on the 22d March, 1609, for the support of the Right Hon. Lady Arabella Seymour, (then Stewart,) for the term of 21 years, empowering Sir George St. Poll and Henrie Yelverton, Esq. to nominate and appoint at their pleasure such persons as they might think fit to keep a tavern in any part of Ireland; and to buy and sell in gross or by retail, by the gallon, or by a greater or lesser measure, good and wholesome wines; and to make and sell, in gross by retail, *aqua-vitæ* and *usquebaugh*.

A grant in reversion, after the expiration of the above, was given for 32 years at 100 marks' rent to James, Viscount Doncaster; and licenses were continued to be granted for the keeping taverns, making and selling *aqua-vitæ* and *usquebaugh* until the 17th August, 1529.

Cromwell, for the better ordering of licenses to be granted in Ireland, for the sale of wine, and the making and retail of *aqua vitæ*, appointed Thomas Longe, Esq. and Dr. Joseph Waterhouse, Commissioners, to treat, contract, and compound, in his name and on his behalf, with any person or persons whatever, being natural born subjects or denizens, for and concerning the licensing or the keeping of any tavern or taverns, and for selling, uttering, and retailing wines, as well as the making, selling, and retailing *aqua vitæ*—fee £100 per annum to each.

Besides these regulations, in 1612 a duty was imposed on all wines imported into Ireland at the following rates, viz. :—on every tun of Spanish, Levant, or Canary, imported by natural-born subjects of Ireland or England, 40s. Irish, and by strangers, £2. 13s. 4d.; upon all French, £1. 6s. 8d., and by strangers, 40s. (10th. Jac. I.)

From the foregoing extracts, with which I was favoured by a gentleman intimately conversant with the records of the country, the intelligent reader will observe the great contrast between the present and former systems of licensing distillers, and others connected with the wine and spirit trades—illustrating, in this respect, an obscure portion of Irish history.

In the notice of brewing porter, page 628, the heat at which the liquor is sent to the tun is there stated to be 60°. Other brewers send it to the tuns at from 60° to 64° of temperature, according to the strength, or specific gravity of the liquor; but a good deal depends on the heat of the weather and the situation of the utensils.

In the first mashing, the heat of the water poured on good dry malt, should be 165°, and the proportion of water run in from the copper, should be to the quarter of malt, $3\frac{1}{2}$ barrels. The mashing, or raking of the grain should continue for about half an hour. In the second mash, the heat of the liquor or water should be 175°, and the proportion let in from the coppers, should be from $1\frac{1}{2}$ to $1\frac{3}{4}$ barrels of water to each quarter of malt, and the raking in this mash should continue from twenty minutes to half an hour, and be let stand, for three quarters of an hour before drawn off the keive. After the first and second mashings are over, in order to take out any saccharine matter that may remain, brewers are in the habit of running water into the kieve at a heat from 180° to 184°, which is technically called a *dash*; and this dashing is continued till the specific gravity shews one degree or nothing on Richardson's saccharometer. The hops to be used are in the proportion of $2\frac{1}{2}$ lbs. to the hhd. or $1\frac{3}{4}$lbs to the barrel for plain porter, and for double X, 5lbs. to the barrel or $7\frac{3}{4}$lbs to the hhd. Country porter requires 24lbs. of saccharine matter, and $4\frac{1}{2}$lbs. of hops to the hhd. or 3lbs. to the barrel. The liquor is sent to the fermenting tuns at a heat of 61° for double X, and at 65° for plain porter, to bring it on the more quickly.

In the brewing of ale, the heat of the first mash is from 160° to 165,° and after this, all the liquor run into the keive is accounted a *dash*. The worts of the first and second mashings are boiled together, and the proportion of hops is 5lbs. to the barrel of malt. From these two mashings, the quantity of liquor sent from the kieve to the coppers to be be boiled, is reckoned at $3\frac{1}{2}$ barrels to the quarter of malt; and it is cooled down and sent to the fermenting-tuns at a heat of 61°. No brown malt is used in the making of ale, as this liquor is generally estimated by its paleness.

INDEX.

Page

Abas-Mirza, anecdote of 87

– – Shah, drinking-cup of 598

Abdelrahman, Sultan, his prohibition of intoxicating liquors . 66

Abulfeda, his notice of Mahomet 35

Abyssinians, beverages of the, 58—distillation practised by, 60—hospitality of, 61—drinking-vessels of, 59 and 63—cup-bearers of, 60, 63—entertainments of, 62

Achmet Cachef, anecdote of 40

Addenda 716

Adel, beverages of 268

Afghanistan, liquors used in, 167—grapes of, *ibid*

Africa, liquors of, ... 268, 269, 270

Agave, liquor from, 296—mode of cultivating, . . . 298

Agras, a Spanish drink 370

Agua-ardiente, ... 303, 307

Aipy, what made from 315

Airen, a term for Koumiss, ... 140

Albania, ... 421

Alboin, drinking-cup of, ... 591

Alchymist, anecdote of an 50

Alchymy, early notice of, 23—derivation of, 31—antiquity of in China, 209

Alcohol, origin and explanation of, ... 31, 362

Alcohometer, description and use of, ... 693

Alderney, distillation in 568

Ale, early name of, 10—antiquity of in Asia, 137—manufacture of, in Great Britain, 544—Burton, *ibid*—duty first imposed on in Scotland, 570—ancient name of in Ireland, 603.

Ale-wives, why so called 543

Alembic, derivation of that term 31

Alexandrian library, destruction of, ... 23

Algiers, liquors used in, ... 81

Ali Bey, treasurer of, ... 40

Ali Effendi, anecdote of, ... 40

Al-Mamon, remarkable observation of, ... 32

Almohdi, anecdote of 36

Al-Mokanna, remarkable suicide of 24

Almond trees, liquors from 499

Anecdotes of smuggling . . . . 562–3, 674, 676, &c.

Page
Angola, wines of 69
Anis, a kind of arrack 198
Anise-seed, use of in Morocco, 79—in Sweden, 479
Annabon, liquors of, ... 71
Amanita muscaria, inebriating effects of the . . . 122, 514
America, opinions respecting the primitive population of, 321 to 325—early notice of distillation in, *ibid*—brandies of, 328—cider of, 329—sugar and rum of, 332, 334—vines of, 333—honey of, *ibid*—Temperance Societies in, 339—Indians of, 349
Amphoræ, found in Pompeii, ... 14
Aqua-vitæ, 191; derivation of, 615
Arabia, liquors of 48
Arabians, remarks on their reputed knowledge of the Arts and Sciences, 29
Araffer, a liquor, ... 187
Arbutus unedo, spirit from the 410
Arjan, a Calmuck and Kirghis drink, ... 146
Arrachaca 311
Arracan, liquors of 179
Arrack, etymology of 140—manufacture of, 160, 161, 162, &c.—Pariah, 164—consumption and manufacture of in Siam, 176, 178—in Ceylon, 183, 185, 187—in Java, 194—Batavia, 193—in Cochin-China, 205—in China 232—in Corea, 237, &c.
Artichokes (Jerusalem), distillation from . . . 398
Ashantee, instance of an extraordinary drinker in, 76—drinking-vessels used in *ibid*—customs observed in, *ibid*
Assam, brandy of, ... 179
Astracan, brandy of, ... 479
Attenuation, ... 663, &c.
Auguur Asji, a kind of grape 85
Aureng-Zebe, anecdote of, ... 96
Ava, drink from 198, 250, 255
Awamuri, a liquor of the Japanese Islands . . . 247

B

Baamboo, a liquor of Sierra Leone, ... 74
Bacanassi, a liquor of the Sunda islands, ... 198
Baksima, a drink 507
Baksoum, a beer of Tartary 149
Balearic islands, wine and brandy of the 376
Ball, a mead of Tartary 145
Ballo, a kind of beer, ... 65, 82
Ballston Waters, exhilarating qualities of, . . . 336
Bananas, distillation from 307
Banquets, at Benin, 71—superb one of Tamerlane, 149—among the Lusitanians, 382—that of Prince Potemkin, 554—magnificent one of the Duke of Moscovy, 522—practice observed at those of the Greeks and Romans, 525—among the Britons, 528—of the ancient Irish, 608—curious custom observed at those of the ancient Egyptians, 712

Page

Banqueting-hall of the king of Loango, 70—of the Irish monarchs at Tara, 613—of Brian Boriomhe, *ibid*—that of Nero, 709

Boabab-tree, description and uses of, ... 74

Barbary, drinks of 81

Barm, origin of the use of, 592—mode of preparing dry barm in France, 390

Bassa latifolia, spirit from the flowers of 163

Batata root, liquor from 315

Batavia, liquors of 195

Bathing in punch, 316—in milk, . . . 145

Beatachs, keepers of houses of entertainment 587

Beer, the early drink of the Egyptians, 7—its invention to whom attributed, 9—early names of 10, 535—speculation concerning in Turkey 43—manufacture of in Tripoli, 80—in New South Wales, 261—at the Cape of Good Hope, 278—from rice at Sofala, 269—in France, 391—antiquity of in Asia, 137—in Peru 304—its use among the aborigines of Florida, 321—in Spain, 375—from potatoes, 442—manufacture of in Bohemia, 443—in Austria, 444—in Germany, 447—in Holland and throughout the Netherlands, 456—in Hanover, 458—in Dantzic, 463—in Prussia 464, 465—in Poland, 467—early attachment of the people of Norway to, 473—in Sweden, 477, 478—in Lapland, 483—in Denmark, 470—formerly brewed in Iceland, 471—in Russia, 490—spruce, 348, 550—policy of rescinding the duty on questioned, 546—made from Mangel-wurzel, 549—manufactured in the Caucasus, 506—from water-melons, 497—made from *heather*, 606.

Bees, mode of rearing in Africa, 63—in Bootan, 173—in Cyprus, 413—in Greece, 422—in Germany, 446—fed on flesh in Bokhara, 169—in Poland, 467—in Russia, 495—in the Crimea, 501—in Circassia, 507—in America, 335—in Ireland, 591.

Beet-root, distillation from in France, 399, 701—ale made from, 549.

Benin, wines of, 71—customs observed in, ... 72

Berlin, beer of 464

Betel, its importance in the East, ... 204

Birman empire, liquors of 174—entertainments and cup-bearers in, 175—cups used in, *ibid*

Birch tree, liquor from 472, 557, 469, 510

Bohemia, malt-drinks and brandy of, ... 443

Borneo, drinks of, ... 195

Bootan, liquors of, 173—horns used by travellers in, *ibid*

Bokhara, melons and liquors of, 168—meals of the monarch in, *ibid*—food for bees in, 169

Bour, a beverage used in Nubia, ... 57

Boule-ponge, a liquor of India, ... 156

Bourbon, liquors of, ... 189

Bouza, ... 50, &c. &c.

Braga, the Fada of the Circassians, ... 508, 505

Bramins, anecdotes of one, 161; abstinence of from wine, 162

Brandy, material from which made in Morocco, 78—prevents the elephantiasis 79—made from honey, 82—in Persia, 85, 94—Kislar, 505—in Bucharia, 148—

Page
in India, 165—imports and exports of, 176—at the Cape, 273—Pulque, 268—in Peru, 305—in Chili, 307—in Paraguay, 312—in the United States, 328—in Madeira, 360—in Spain, 354, 365—in France, 398, 400—in Hungary, 446—in Switzerland, 451—in Hanover, 448—in Dantzic, 463—in Poland, 466—in Denmark, 469—in Norway, 474—in Sweden, 474—in Russia, 489—in Kamtschatka, 511.
Brew, derivation of the word 363
Brewery, expense of establishing one in Ireland, 625; discovery of an ancient one for the brewing of *heather-beer*, 608
Brom, a drink of Java, ... 194
Brum, a drink of Sumatra, ... 192
Bual, a wine of Madeira, ... 359
Buenos Ayres, ... 311
Bucharia, wine and brandy of, ... 148
Bull, a drink of New Holland, ... 264
Bursa, a drink of the Kiwenses, ... 150
Burton ale, ... 544
Busa, a drink of Fezzan, ... 67
Brian Boriombe, large wine-store of 614

C

Cabul, liquors of, ... 167
Cacongo, liquors of, ... 71
Caffraria, beverages of, ... 279
California, liquors of, ... 355
Callu, a term for palm-wine, ... 154
Cambodia, beverages of, ... 179
Canada, 341—spruce-beer, 348—distillation from potatoes in, *ibid*
Canary isles, wine of 357
Candia, liquors of, ... 410
Cape of Good Hope, remarks on the settlement at, 270—exports of, 273, 717
Caroline islands, beverages of, ... 249
Carthaginians, their early connection with Ireland, 587
Caucasus, maddening honey of 507
Celebes, beverages of the 198
Cephalonia, wines of 409
Ceylon, liquors used in, 180—distillation in, 183—extraordinary mode of drinking in, 181—marriage feasts of, 187—exports of, 716
Chalibonian wine, ... 5
Chemistry, early knowledge of, 20—origin of the term, 21
Chili, liquors of, 307—drinking vessels used in, 309
Chica, 292—mode of making in Peru, 293
China, remarks on, 208—early notice of distillation in, 211—early commerce of, 212—taste for literature in, 213—cultivation of the vine in, 216—rice-wines and brandies of, 217, 218—entertainments and invitations in 219, 220, 221—manufacture of beer in, 221—population of, 224—drinking-cups used in, 227—anecdote of a host in, *ibid*—distillation in, 228–9—lamb-wine of, 230—manufacture of sugar in, 231

Page
Cider, derivation of, 7—made in Barbary, 78—in the United States, 329—in Peru, 393—in Canada, 345—in Great Britain, 550—in Ireland, 593—distillation of in Normandy, 398—wine from, 552
Circassia, liquors of 506
Cochin-China, liquors of 205
Coca, used by the Peruvians for opium 123
Coco de mer, cups formed of 191
Congo, palm-wine of, 68—cup-bearers in, *ibid*—wine-taster of the king of, 69
Constantia wine, ... 270
Corea, beverages of 237
Corinth,—and derivation of currants 410
Crete, or Candia, wines of 410
Crimea, beverages used in 500
Criminals, strong drink given to before execution . . . 5
Cup-bearers, ancient names of, 610—antiquity of, *ibid*—their costume, 611—their importance and privileges in Oriental courts, *ibid*—among the Greeks and Romans, &c. *ibid*—the ancient Britons, 612—female employed by the Indian kings, &c. *ibid*—at the Irish court, *ibid*—of the American Chiefs, *ibid*—in Congo, 68—in Loango, 70—in Japan, 239—in Abyssinia, 60, 63—in Dahomy, 64—in Ashantee, 76—the Friendly Islands, 251—in China, 227—among the Burmese, 175—the Lusitanians, 382—in the Western Islands, 569, 582
Cups for drinking used among various nations, 55, 147, 149, &c. &c. interesting account of, 593

D

Dahomy, beverages of, 64—drinking-cups used in, *ibid*—stratagem of a monarch of, 65
Dantzic, beverages of, 463—grain stores at and mode of guarding, 462
Darfur, liquors of 66
Date tree, description of, 51, 52—wine made from in Nubia, 55—revenue and trade in, 55, 81
Denmark, beverages of 469
Distillation, origin of, 21, 22, 23—from dates in Egypt, 51—in Nubia, 55—in India, 158—in Sumatra, 192—in China, 211—in Japan, 243—in Persia, 85, 95—at the Cape, 273—in Mexico, 298—in Peru, 303—in Chili, 307—in Paraguay, 312—in the United States, 328—in Canada, 343—in Madeira, 360—in Spain, 364—in Portugal, 380—in France, 398—in Hungary, 446—in Switzerland, 451—in Hanover, 458—in Dantzic, 463—in Poland, 466—in Denmark, 469—in Norway, 474—in Sweden, 475—in Russia, 489—in Astracan, 497—in the Crimea, 500—in Siberia, 500—in Kamtschatka, 511—in England, 559—in Scotland, 572—in Guernsey and Jersey, &c. 568—in Ireland, 631—illicit distillation, 671
Drinking, anecdotes of . . . . . 12, 13, 36, 37, 38, 39, &c.
Drinking-glasses, from whence first procured 555
Drunkenness thought to be one of the chief causes of the deluge, 4—remarks on, 705
Druzes, liquors and customs of 47

E

Egypt, account of the drinks used in. 51

Page

Egyptians, wine of 5
Eldon, wine of 5
Elba, wines of 408
Elephants fed on sugar 157
Embeth, a wine of Cacongo 71
England, on the cultivation of the vine in, 523—antiquity and extent of its manufacture and trade in malt-liquors, 529 to 545—immense establishments for brewing, 540—great importance of the duty on malt, 545—policy of repealing the beer-duty considered, *ibid*—manufacture of cider, 550—perry, 552—home-made wines, 556—imports and exports of wine, *ibid* and Addenda—distillation, 559—imports and exports of spirits, 561—rectifiers, 565, 704—for the number of distillers see Addenda, 730.
Erivan, attachment of the people of to punch 90
Europe, introduction of distillation into 361, 615
Excise, origin of the term 531

F

Fada, a Circassian beverage 508
Fermentation, 662—remarks on *spontaneous*, 665
Fezzan, beverages of 67
Finland, propensity of its inhabitants for strong liquors . . 485
Feasts of the dead 78, 241, 269, 350
Floridas, beverages of, 320—feasts and manners of the aborigines of, 321
Formosa, drinks of 325
France, 380—remarks on the introduction of the vine into, *ibid*—distillation of brandy in, 392—of the Jerusalem artichoke and potatoes, 398—from beet-root, 399, 701—manufacture of liqueurs in, 400—remarks on the wine-trade, 402
Frankfort, sale of Renish wine at 433
Friendly Islands, beverages of, 250—cup-bearers of, 251

G

Gauls, liquors and feasts of the 380
Gaza, wine of 5
Gear, an ale of Ragada in Africa 66
Geber, writings of 25
Geneva, manufacture of . . . . . 452 to 455
Gentian, use of, 537—notice of distillation from, 606
Georgia, liquors of 503
Georgian Islands, distillation in 256
Germany, vintage and wines of, 436 to 440—distillation from potatoes in, 441
Gold Coast, liquors of the 72
Goldwasser, a liquor of Prussia 261
Grapa, a drink of the Negroes 315
Grapes, varieties of in Persia, 91—how preserved, 93
Greece, liquors of . . . . . 408 to 422
Guallo, a liquor of Congo 68
Guarapo, a Peruvian drink 302
Guinea, partiality of the natives for strong liquors . . . 72

Page

H

Hainan, notice of that island 234, 235
Ha-mi, interesting account of 233
Hanover, beverages of, 458—distillation in, 459
Hautkups, a beverage of the Circassians . . . 506
Health-drinking, origin of 525
Heath, use of, 537—distillation from, 582—607
Heather-beer, manufacture of, 606—anecdote respecting, 607—discovery of a brewery for, 608
Hemlock peculiar application of 12, 127
Hippocrates, his recommendation of wine . . . 95
Honey in Syria, 48—in Egypt, 54—in Nubia, 57—distilled into brandy, 82—intoxicating kind of, 469, 507—notices respecting in New South Wales, 258—in Caffraria, 280—Honey-bird or indicator, 280—in the United States, 335—in Canada, 348—Cyprus, 413—Greece, 422—Germany, 446—Austria, 442—Prussia, 460—Dantzic, 463—Poland, 467, 468—Russia, 495, 496—the Crimea, 501—Georgia, 505—in Circassia, 507—in Ireland, 591.
Honey-moon, derivation of the term 466
Hops in the United States, 335—history of and introduction into England, 535—substitutes for, 536—soporific qualities of, 128—its tops esteemed a delicacy, 129
Hemp-plant, inebriating qualities of 117, 118, 121
Hungary, wines of, 424—brandy, 429—early notice of *aqua-vitæ* in, 446
Horns used for drinking, and great size of . . . 59, 504
Hydromel, 59—manufacture of in Abyssinia, 60, 61—in Poland, 469
Hydrometers, description and use of, 689, 690, 693—anecdote respecting, *ibid*

I

Iceland, beverages of, and remarks on 471
India, early notice of fermented liquors in, 151—ancient cups used in, 156—cultivation of the sugar-cane, 157—distillation, 158–9—arrack, imports and exports of, 162–3—use of spirituous liquors in, 170
Inebriating drinks, what led to their discovery, 2—account of in the Padma Puran, a sacred book of India, 151
Intoxication, to what attributed 683
Ionian Islands, wines of, 408, 720—imports and exports, *ibid*
Ireland, 583—progress of the arts in, 585—hospitality of its inhabitants, 588—early beverages of, 591—drinking-vessels used in, 593, 597, 598, 599—early notice of wine, 600—early knowledge of malting, 601—introduction of water-mills into, 603—manufacture of heather-beer, 606—entertainments and cup-bearers in 610, 613—*aqua-vitæ* early manufactured in, 615—distillation known in at a remote period, *ibid*, 616, 617—principal brewing establishments of, 629, 630—extensive distilleries in, 668–9, see Addenda, 725, 726, 730—concluding remarks on, 705
Isle of France, liquors of the 190
Italy, wines of 404

Page
Ithaca, wines of 410

J

Japan, beverages of, 238—cup-bearers in, 239—antiquity of brewing in, *ibid*—drinking-vessels of, 240, 243—curious notice of stills and brewing utensils, 244—distillation in, 243—remedy for drunkenness in, 248—remarkable and pathetic anecdote of two natives of, 241—singular effects of the todonoevo in, 248
Jassy, wines of 424
Jatropha-manihot, spirits from 298
Java, distillation in, 193—drinking-cups of, . . . 196
Jerusalem artichokes, distillation from 398
Jersey, liquors of 568
Jesso, island of 244
Jora, malt of the Peruvians 304
Jin-jin-di, an African drink 77
Juniper-berries, uses of in Lapland, Sweden, and Holland . 452

K

Kava, a beverage peculiar to many islands in the Pacific and mode of preparing, 250—wonderful effects of, 252.
Kamtschatka, 511—spirits made from grass in, 512—anecdotes of the inhabitants of, 513, 514, 516, 517.
Kea-sum, ancient name for brandy 362
Kebul, spirit from 169
Kirschwasser, or cherry-water, a brandy of Switzerland . 450
Koramas, mead of the 280
Kislar, brandy distilled from water-melons at, 505—wine from mulberries, *ibid*—from peaches, ... *ibid*
Koumiss, a beverage of the Tartars, 136—from mares' milk, 137—mode of preparing, 138—made from the milk of cows, sheep, and camels, 140, 167—distillation of, 140, ... 142
Kriska, a liquor of the Gold Coast 73
Kümmelwasser, a beverage 463
Kutuki, anecdote of 139

L

Ladrone Islands, beverages of 248
Laghibi, a liquor of Tripoli 80
Lalo, a preparation of the Boabab 74
Lamb-wine 159, 226
Lapland, beverages of, 481—anecdote of a native . . 484
Lebanon, wine of 5
Lemnos, wine of 416
Lemon tree, liquor from the 230
Lipari Islands, wines of the 408
Liqueurs, origin and invention of 400
Liquor of immortality in China and Japan, 210, 243—in the Floridas, 320
Loo-Choo Islands, beverages of the 246

Page

Loango, cup-bearers in, 70—customs observed in drinking in, *ibid*
Lotus plant, account of 8—wine from, ... 80
Lotophagi, why so called 8, 80
Louvaine, beer of 456
Lugibi, a liquor of Fezzan 67
Luneburgh, regulations respecting distillation in . . 459

M

Maby, a drink of the West Indies, ... 290
Macassar, beverages of 199
Madagascar, curious notions of the natives respecting the rivers of Paradise, 3—beverages of 187—cups of, 189.
Madeira, wines of 358
Mahayah, a spirit from figs, ... 78
Mahometans, prohibition of wine amongst, 33—anecdotes respecting, 35, 36, 37, 90—mode of evading the prohibition by the Moors, . 78
Mahwah tree, beverages from 153, 173
Maize, spirit from, 292—sugar from, 300—beer from, . 304
Malt early known to the Peruvians, 304—in Ireland, . 671
Mandebocre, a liquor of Paraguay 311
Mangel-wurzel, ale from, 549—distillation from, 701, . 399
Manilla, beverages of 200
Mariana Islands, liquors of 248
Maraschino, a liquor of Dalmatia 423
Masakhaw, a beverage of Formosa 236
Masato, an American drink 305
Mathews, Mr., anecdote of 589
Mauritius, beverages of 190
Maximin, his great powers in drinking 13
Mead of the Tartars, 146—of the Germans, 446—of the Russians, 494—in Circassia, 508—India, 165—Poland, 467—Spain, 375—Moldavia, 424—Germany, 446—Prussia, 460—Dantzic, 463—in the Crimea, 502—derivation of the term, 591—antiquity of in Ireland, . *ibid*
Meather, or Mether, antiquity and use of . . . 593
Mediterranean Isles, beverages of 408
Melons, beverages from 150, 168
Mexical, a spirit from the agave 294
Mexico, liquors used in, 298—punishment for drunkenness in 299.
Mezcal, spirit from the 355
Milaffo, a wine of Congo 67
Milk of Mares distilled by the Tartars, 140—preparation of in Iceland, *ibid*—used for a bath, 145—procured from vegetables, *ibid*—that of sheep distilled by the Calmucks, 146—specific gravity of that of different animals, 686.
Minorca, wines of 376
Mindanao, abundance of honey in 202
Mitylene, wines of 417
Moluccas, beverages of the 199
Morocco, inebriating liquors in 87

Page

Moorafacoo, a drink used in the Loo-Choo Islands . . . 247
Motherwort, beverage from 242
Mum, 447—origin of the term, 448—receipt for making, *ibid*
Mushroom, *(Amanita Muscaria)* beverage from . . . 514
Must, at what heat fermentable 2

N

Naples, wines of 404
Naxos, or Naxia, marble cups of, 416—distillation from lemons in, *ibid.*
Negroes, beverages of in Africa 63
Nepaul, beverages of, 165—human sculls used as drinking-vessels in, *ibid.*
Nepenthe of Homer, what 6, 606, 97
Netherlands, brewing in 456
New Holland, distillation in 258
New South Wales, remarks on, 259—distillation in, 260—beer of, 261—intemperance in, 262—anecdote of an Irishman in, *ibid*, cultivation of the vine in 266.
Nicobar Islands, beverages of the 180
Norway, distillation from potatoes in 474
Nubeez, a Persian liquor 01
Nubia, liquors of 55

O

Oases, notice of the 52
Observations on the effects of drinking in India . . 169
Ombelbel, a name given to Bouza 56
Opinions of Davy and Paris respecting the origin of Genii, Gouls, &c. among the Arabians, 50.
Opium, derivation of the word, 97—manufacture of in Asia, *ibid*—in Persia, *ibid*—in India, 98—revenue arising from, 100—price of in India, 101—smoked extensively by the Mandarins, *ibid*—its effects, 102—its use denounced by a Mussulman preacher, 104—sale and use of in Siam, 106—in Borneo and Sumatra, 106, 107—among the Celebes, *ibid*—its effects on the Javanese, 108—used by the Rajpoots, Gracias, &c. 110, 111—its effects on animals, 116, 117—used by the Indian jockeys, 117—by Chinese thieves, 125—specimen of a Chinese proclamation against, 134—substitutes for, 117, 125—export of, 716.
Opium-eaters, anecdotes of, 111, 112, 113, 114, 115, 116, 117, 132, 134, 135, 136—quantities used by, 132.
Oporto, wines of 378
Otaheite, liquors used in 252
Oteè, an African ale 66
Ouycou, a beer of the West Indies 289

P

Palestine, vineyards of 4
Pali, an African wine 71
Palm-wine, mode of obtaining at Sierra Leone, 73—used as a bribe in courtships, 78—as offerings to the dead, *ibid*—in India, 154—supposed to be the "strong drink" of the Scriptures, 7—in Peru, 304.

Page

Palmyra, origin of the name 7
Paraguay, beverages of, 311—distillation of brandy in, 312.
Patagonia, liquors of 318
Peaches, brandy from, 243, 255—distillation from, . . 328
Perfumes in wine 5
Perry, manufacture of 552
Persians, drinks of, 82—anecdotes of, . . . 87, 88
Persimon apple, brandy from 328
Peru, liquors of, 293—antiquity of malting in, . . 304
Phaur, a beer from rice 165
Pigment, or Piment 528
Pitto, a drink of Dahomy 64
Pitcairn Islands, beverages of 254
Piworree, a liquor of Barbadoes 289
Plums, wine from 557
Poland, beverages of 446
Pomegranates, wine from, 92—cider from, . . . 208
Pledging in drinking, origin of 528 616
Pompeii, remains of taverns in 405
Poppy, its intoxicating effects 96
Porter, derivation of the term, 539—importance of the trade in England, 540—in Ireland, 626, 731.
Prussia, mead of, 451—distillation from potatoes in, . . *ibid*
Portugal, wines and brandies of. . . . . 376 to 383
Potatoes, Abyssinian beverage from 63—wine and spirit from in Canada, 348—from the berries of in France, 399—brandy from in Hungary, 429—distillation of in Germany—beer from, 442, 699—distillation of in Prussia, 460—in Norway, 474—manufacture of spirits from, 695, 696, 697, 698, 690, 700.
Pottinger, Captain, his plan for collecting the duty on spirits . 657
Punch, the derivation of, 621—anecdote of a drinker of . . 622
Punjabee chiefs, their mode of feeding horses . . 157

Q

Quass, a Russian beverage 491, 492
Quassia, use of 537
Querns, notice of 603
Quiloa, human sculls formerly used as drinking-cups in . 270
Quinces, wine from 218

R

Rabbins, opinions of respecting the vine 3
Rectifiers, regulations respecting in England, 567—in Ireland, 703—number of in Great Britain, and Ireland, 704—suggestions for the improvement of their trade, *ibid*, ... 705
Rhazes, his introduction of chemical preparations into medicine . 24
Rhine, wines of the 430
Rododendron crysanthum, its inebriating effects . . 129
Rice, wine from 211, 217, 226

Page
Rose-water, early made by the Persians, 91—quotation from a Saadi respecting, 93.
Rosolio, 41—made at Dantzic, 463.
Rubus arcticus, wine from 480
Rubus Chamæmorus, liqueur from . . . . . *ibid*
Rudkin, his plan for the collection of the duty on spirits . . 658
Rum, distillation of in the Carnatic, 158—made in China, 218—derivation of the term, 282—its manufacture in the West Indies, 283—in Brazil, 314—in the United States, 331, 334—trade of in England, . . 561
Russia, 487—revenue derived from brandy in, 490—extensive breweries, 491—mead manufactured to great extent, 494—importance of honey for home-consumption, and as an article of commerce, 495—mode of rearing bees, *ibid*—cultivation of the vine, 496—imports and exports, 520, 521—distillation a monopoly of the crown, ... 518

S

Saccharometer, invention and use of 684
Sack, derivation of the term 357
Sacki, a Japanese beer, 238—derivation of the term, *ibid.*
Saffron, early use of in Ireland 620
Sagwire, a species of palm-wine 195
Sal-Indicum, first name for sugar in Europe 366
Sam-tchoo, a Chinese liquor 217
Sandwich Islands, liquors of 254
Sangaree, a drink of the West Indies 288
Saracens, opinions concerning their inventions and discoveries controverted, 21, 163, 361.
Sardinia, wines of 406
Satschio, a Japanese brandy 240
Savages of America, their feast of the dead, 350—anecdotes of their chiefs, 351
Sbitena, or Sbetin, a Russian drink, ... 494
Scotland, primitive beverages of, 569—brewing in, 570—distillation, 572.
Sculls, used as drinking-cups, 165, 270—curious anecdotes respecting, 598.
Seneca, his complaint of women using wine to excess . . 12
Shetland Islands, distillation from heather formerly practised in . 592
Shiraz, wine of, 84—derivation of, *ibid.*
Siam, liquors of 176
Siberia, liquors used in 509
Sicily, wines of 407
Sierra-Leone, drinks used there, 73—introduction of the vine, 74.
Skins of beasts used for holding wine, 18, 19—among the Tartars, 139—in Pompeii, 140—in Madeira, 603—in Georgia, 502—among the Pampas, 311—
Soliman I., his exertions to prevent drunkenness . . . 39
Sora, a beer of Peru 306
Spain, early notice of distillation in, 362—custom of a Celtic king of, 362—early cultivation of the vine in, *ibid*—brandies of, 363—wines, 367—granaries, 374—breweries, 375—cider, *ibid*—mead of, *ibid.*
Specific gravity, 686, 692—anecdote respecting, 693.

Page
Cider, derivation of, 7—made in Barbary, 78—in the United States, 329—in Peru, 393—in Canada, 345—in Great Britain, 550—in Ireland, 593—distillation of in Normandy, 398—wine from, 552
Circassia, liquors of 506
Cochin-China, liquors of 205
Coca, used by the Peruvians for opium 123
Coco de mer, cups formed of 191
Congo, palm-wine of, 68—cup-bearers in, *ibid*—wine-taster of the king of, 69
Constantia wine, ... 270
Corea, beverages of 237
Corinth,—and derivation of currants 410
Crete, or Candia, wines of 410
Crimea, beverages used in 500
Criminals, strong drink given to before execution . . 5
Cup-bearers, ancient names of, 610—antiquity of, *ibid*—their costume, 611—their importance and privileges in Oriental courts, *ibid*—among the Greeks and Romans, &c. *ibid*—the ancient Britons, 612—female employed by the Indian kings, &c. *ibid*—at the Irish court, *ibid*—of the American Chiefs, *ibid*—in Congo, 68—in Loango, 70—in Japan, 239—in Abyssinia, 60, 63—in Dahomy, 64—in Ashantee, 76—the Friendly Islands, 251—in China, 227—among the Burmese, 175—the Lusitanians, 382—in the Western Islands, 569, 582
Cups for drinking used among various nations, 55, 147, 149, &c. &c. interesting account of, 593

D

Dahomy, beverages of, 64—drinking-cups used in, *ibid*—stratagem of a monarch of, 65
Dantzic, beverages of, 463—grain stores at and mode of guarding, 462
Darfur, liquors of 66
Date tree, description of, 51, 52—wine made from in Nubia, 55—revenue and trade in, 55, 81
Denmark, beverages of 469
Distillation, origin of, 21, 22, 23—from dates in Egypt, 51—in Nubia, 55—in India, 158—in Sumatra, 192—in China, 211—in Japan, 243—in Persia, 85, 95—at the Cape, 273—in Mexico, 298—in Peru, 303—in Chili, 307—in Paraguay, 312—in the United States, 328—in Canada, 343—in Madeira, 360—in Spain, 364—in Portugal, 380—in France, 398—in Hungary, 446—in Switzerland, 451—in Hanover, 458—in Dantzic, 463—in Poland, 466—in Denmark, 469—in Norway, 474—in Sweden, 475—in Russia, 489—in Astracan, 497—in the Crimea, 500—in Siberia, 500—in Kamtschatka, 511—in England, 559—in Scotland, 572—in Guernsey and Jersey, &c. 568—in Ireland, 631—illicit distillation, 671
Drinking, anecdotes of . . . . 12, 13, 36, 37, 38, 39, &c.
Drinking-glasses, from whence first procured . . . 555
Drunkenness thought to be one of the chief causes of the deluge, 4—remarks on, 705
Druzes, liquors and customs of 47

E

Egypt, account of the drinks used in. 51

Page

Egyptians, wine of 5
Eldon, wine of 5
Elba, wines of 408
Elephants fed on sugar 157
Embeth, a wine of Cacongo 71
England, on the cultivation of the vine in, 523—antiquity and extent of its manufacture and trade in malt-liquors, 529 to 545—immense establishments for brewing, 540—great importance of the duty on malt, 545—policy of repealing the beer-duty considered, *ibid*—manufacture of cider, 550—perry, 552—home-made wines, 556—imports and exports of wine, *ibid* and Addenda—distillation, 559—imports and exports of spirits, 561—rectifiers, 565, 704—for the number of distillers see Addenda, 730.
Erivan, attachment of the people of to punch . . . 90
Europe, introduction of distillation into . . . 361, 615
Excise, origin of the term 531

F

Fada, a Circassian beverage 508
Fermentation, 662—remarks on *spontaneous*, 665
Fezzan, beverages of 67
Finland, propensity of its inhabitants for strong liquors . 485
Feasts of the dead 78, 241, 269, 350
Floridas, beverages of, 320—feasts and manners of the aborigines of, 321
Formosa, drinks of 325
France, 380—remarks on the introduction of the vine into, *ibid*—distillation of brandy in, 392—of the Jerusalem artichoke and potatoes, 398—from beet-root, 399, 701—manufacture of liqueurs in, 400—remarks on the wine-trade, 402
Frankfort, sale of Renish wine at 433
Friendly Islands, beverages of, 250—cup-bearers of, 251

G

Gauls, liquors and feasts of the 380
Gaza, wine of 5
Gear, an ale of Ragada in Africa 66
Geber, writings of 25
Geneva, manufacture of . . . . . 452 to 455
Gentian, use of, 537—notice of distillation from, 606
Georgia, liquors of 503
Georgian Islands, distillation in 256
Germany, vintage and wines of, 436 to 440—distillation from potatoes in, 441
Gold Coast, liquors of the 72
Goldwasser, a liquor of Prussia 261
Grapa, a drink of the Negroes 315
Grapes, varieties of in Persia, 91—how preserved, 93
Greece, liquors of . . . . . 408 to 422
Guallo, a liquor of Congo 68
Guarapo, a Peruvian drink 302
Guinea, partiality of the natives for strong liquors . . 72

Page

H

Hainan, notice of that island 234, 235
Ha-mi, interesting account of 233
Hanover, beverages of, 458—distillation in, 459
Hautkups, a beverage of the Circassians 506
Health-drinking, origin of 525
Heath, use of, 537—distillation from, 582—607
Heather-beer, manufacture of, 606—anecdote respecting, 607—discovery of a brewery for, 608
Hemlock peculiar application of 12, 127
Hippocrates, his recommendation of wine 95
Honey in Syria, 48—in Egypt, 54—in Nubia, 57—distilled into brandy, 82—intoxicating kind of, 469, 507—notices respecting in New South Wales, 258—in Caffraria, 280—Honey-bird or indicator, 280—in the United States, 335—in Canada, 348—Cyprus, 413—Greece, 422—Germany, 446—Austria, 442—Prussia, 460—Dantzic, 463—Poland, 467, 468—Russia, 495, 496—the Crimea, 501—Georgia, 505—in Circassia, 507—in Ireland, 591.
Honey-moon, derivation of the term 466
Hops in the United States, 335—history of and introduction into England, 535—substitutes for, 536—soporific qualities of, 128—its tops esteemed a delicacy, 129
Hemp-plant, inebriating qualities of 117, 118, 121
Hungary, wines of, 424—brandy, 429—early notice of *aqua-vitæ* in, 446
Horns used for drinking, and great size of 59, 504
Hydromel, 59—manufacture of in Abyssinia, 60, 61—in Poland, 469
Hydrometers, description and use of, 689, 690, 693—anecdote respecting, *ibid*

I

Iceland, beverages of, and remarks on 471
India, early notice of fermented liquors in, 151—ancient cups used in, 156—cultivation of the sugar-cane, 157—distillation, 158–9—arrack, imports and exports of, 162–3—use of spirituous liquors in, 170
Inebriating drinks, what led to their discovery, 2—account of in the Padma Puran, a sacred book of India, 151
Intoxication, to what attributed 683
Ionian Islands, wines of, 408, 720—imports and exports, *ibid*
Ireland, 583—progress of the arts in, 585—hospitality of its inhabitants, 588—early beverages of, 591—drinking-vessels used in, 593, 597, 598, 599—early notice of wine, 600—early knowledge of malting, 601—introduction of water-mills into, 603—manufacture of heather-beer, 606—entertainments and cup-bearers in 610, 613—*aqua-vitæ* early manufactured in, 615—distillation known in at a remote period, *ibid*, 616, 617—principal brewing establishments of, 629, 630—extensive distilleries in, 668–9, see Addenda, 725, 726, 730—concluding remarks on, 705
Isle of France, liquors of the 190
Italy, wines of 404

Page

Ithaca, wines of 410

J

Japan, beverages of, 238—cup-bearers in, 239—antiquity of brewing in, *ibid*—drinking-vessels of, 240, 243—curious notice of stills and brewing utensils, 244—distillation in, 243—remedy for drunkenness in, 248—remarkable and pathetic anecdote of two natives of, 241—singular effects of the todonoevo in, 248

Jassy, wines of 424

Jatropha-manihot, spirits from 298

Java, distillation in, 193—drinking-cups of, . . . 196

Jerusalem artichokes, distillation from 398

Jersey, liquors of 568

Jesso, island of 244

Jora, malt of the Peruvians 304

Jin-jin-di, an African drink 77

Juniper-berries, uses of in Lapland, Sweden, and Holland . 452

K

Kava, a beverage peculiar to many islands in the Pacific and mode of preparing, 250—wonderful effects of, 252.

Kamtschatka, 511—spirits made from grass in, 512—anecdotes of the inhabitants of, 513, 514, 516, 517.

Kea-sum, ancient name for brandy 362

Kebul, spirit from 169

Kirschwasser, or cherry-water, a brandy of Switzerland . 450

Koramas, mead of the 280

Kislar, brandy distilled from water-melons at, 505—wine from mulberries, *ibid*—from peaches, ... *ibid*

Koumiss, a beverage of the Tartars, 136—from mares' milk, 137—mode of preparing, 138—made from the milk of cows, sheep, and camels, 140, 167—distillation of, 140, ... 142

Kriska, a liquor of the Gold Coast 73

Kümmelwasser, a beverage 463

Kutuki, anecdote of 139

L

Ladrone Islands, beverages of 248

Laghibi, a liquor of Tripoli 80

Lalo, a preparation of the Boabab 74

Lamb-wine 159, 226

Lapland, beverages of, 481—anecdote of a native . . 484

Lebanon, wine of 5

Lemnos, wine of 416

Lemon tree, liquor from the 230

Lipari Islands, wines of the 408

Liqueurs, origin and invention of 400

Liquor of immortality in China and Japan, 210, 243—in the Floridas, 320

Loo-Choo Islands, beverages of the 246

Page

Loango, cup-bearers in, 70—customs observed in drinking in, *ibid*
Lotus plant, account of 8—wine from, ... 80
Lotophagi, why so called 8, 80
Louvaine, beer of 456
Lugibi, a liquor of Fezzan 67
Luneburgh, regulations respecting distillation in . . 459

M

Maby, a drink of the West Indies, ... 290
Macassar, beverages of 199
Madagascar, curious notions of the natives respecting the rivers of Paradise, 3—beverages of 187—cups of, 189.
Madeira, wines of 358
Mahayah, a spirit from figs, ... 78
Mahometans, prohibition of wine amongst, 33—anecdotes respecting, 35, 36, 37, 90—mode of evading the prohibition by the Moors, . 78
Mahwah tree, beverages from 153, 173
Maize, spirit from, 292—sugar from, 300—beer from, . 304
Malt early known to the Peruvians, 304—in Ireland, . 671
Mandebocre, a liquor of Paraguay 311
Mangel-wurzel, ale from, 549—distillation from, 701, . . 399
Manilla, beverages of 200
Mariana Islands, liquors of 248
Maraschino, a liquor of Dalmatia 423
Masakhaw, a beverage of Formosa 236
Masato, an American drink 305
Mathews, Mr., anecdote of 589
Mauritius, beverages of 190
Maximin, his great powers in drinking 13
Mead of the Tartars, 146—of the Germans, 446—of the Russians, 494—in Circassia, 508—India, 165—Poland, 467—Spain, 375—Moldavia, 424—Germany, 446—Prussia, 460—Dantzic, 463—in the Crimea, 502—derivation of the term, 591—antiquity of in Ireland, . *ibid*
Meather, or Mether, antiquity and use of . . . 593
Mediterranean Isles, beverages of 408
Melons, beverages from 150, 168
Mexical, a spirit from the agave 294
Mexico, liquors used in, 298—punishment for drunkenness in 299.
Mezcal, spirit from the 355
Milaffo, a wine of Congo 67
Milk of Mares distilled by the Tartars, 140—preparation of in Iceland, *ibid*—used for a bath, 145—procured from vegetables, *ibid*—that of sheep distilled by the Calmucks, 146—specific gravity of that of different animals, 686.
Minorca, wines of 376
Mindanao, abundance of honey in 202
Mitylene, wines of 417
Moluccas, beverages of the 199
Morocco, inebriating liquors in 87

Page
Moorafacoo, a drink used in the Loo-Choo Islands . . 247
Motherwort, beverage from 242
Mum, 447—origin of the term, 448—receipt for making, *ibid*
Mushroom, *(Amanita Muscaria)* beverage from . . . 514
Must, at what heat fermentable 2

N

Naples, wines of 404
Naxos, or Naxia, marble cups of, 416—distillation from lemons in, *ibid.*
Negroes, beverages of in Africa 63
Nepaul, beverages of, 165—human sculls used as drinking-vessels in, *ibid.*
Nepenthe of Homer, what 6, 606, 97
Netherlands, brewing in 456
New Holland, distillation in 258
New South Wales, remarks on, 259—distillation in, 260—beer of, 261—intemperance in, 262—anecdote of an Irishman in, *ibid*, cultivation of the vine in 266.
Nicobar Islands, beverages of the 180
Norway, distillation from potatoes in 474
Nubeez, a Persian liquor 01
Nubia, liquors of 55

O

Oases, notice of the 52
Observations on the effects of drinking in India . . 169
Ombelbel, a name given to Bouza 56
Opinions of Davy and Paris respecting the origin of Genii, Gouls, &c. among the Arabians, 50.
Opium, derivation of the word, 97—manufacture of in Asia, *ibid*—in Persia, *ibid*—in India, 98—revenue arising from, 100—price of in India, 101—smoked extensively by the Mandarins, *ibid*—its effects, 102—its use denounced by a Mussulman preacher, 104—sale and use of in Siam, 106—in Borneo and Sumatra, 106, 107—among the Celebes, *ibid*—its effects on the Javanese, 108—used by the Rajpoots, Gracias, &c. 110, 111—its effects on animals, 116, 117—used by the Indian jockeys, 117—by Chinese thieves, 125—specimen of a Chinese proclamation against, 134—substitutes for, 117, 125—export of, 716.
Opium-eaters, anecdotes of, 111, 112, 113, 114, 115, 116, 117, 132, 134, 135, 136—quantities used by, 132.
Oporto, wines of 378
Otaheite, liquors used in 252
Oteè, an African ale 66
Ouycou, a beer of the West Indies 289

P

Palestine, vineyards of 4
Pali, an African wine 71
Palm-wine, mode of obtaining at Sierra Leone, 73—used as a bribe in courtships, 78—as offerings to the dead, *ibid*—in India, 154—supposed to be the "strong drink" of the Scriptures, 7—in Peru, 304.

Page

Palmyra, origin of the name 7
Paraguay, beverages of, 311—distillation of brandy in, 312.
Patagonia, liquors of 318
Peaches, brandy from, 243, 255—distillation from, . . 328
Perfumes in wine 5
Perry, manufacture of 552
Persians, drinks of, 82—anecdotes of, . . . 87, 88
Persimon apple, brandy from 328
Peru, liquors of, 293—antiquity of malting in, . . 304
Phaur, a beer from rice 165
Pigment, or Piment 528
Pitto, a drink of Dahomy 64
Pitcairn Islands, beverages of 254
Piworree, a liquor of Barbadoes 289
Plums, wine from 557
Poland, beverages of 446
Pomegranates, wine from, 92—cider from, . . . 208
Pledging in drinking, origin of 528 616
Pompeii, remains of taverns in 405
Poppy, its intoxicating effects 96
Porter, derivation of the term, 539—importance of the trade in England, 540—in Ireland, 626, 731.
Prussia, mead of, 451—distillation from potatoes in, . . *ibid*
Portugal, wines and brandies of . . . . . 376 to 383
Potatoes, Abyssinian beverage from 63—wine and spirit from in Canada, 348—from the berries of in France, 399—brandy from in Hungary, 429—distillation of in Germany—beer from, 442, 699—distillation of in Prussia, 460—in Norway, 474—manufacture of spirits from, 695, 696, 697, 698, 690, 700.
Pottinger, Captain, his plan for collecting the duty on spirits . 657
Punch, the derivation of, 621—anecdote of a drinker of . . 622
Punjabee chiefs, their mode of feeding horses . . 157

Q

Quass, a Russian beverage 491, 492
Quassia, use of 537
Querns, notice of 603
Quiloa, human sculls formerly used as drinking-cups in . 270
Quinces, wine from 218

R

Rabbins, opinions of respecting the vine . . . 3
Rectifiers, regulations respecting in England, 567—in Ireland, 703—number of in Great Britain, and Ireland, 704—suggestions for the improvement of their trade, *ibid*, ... 705
Rhazes, his introduction of chemical preparations into medicine . 24
Rhine, wines of the 430
Rododendron crysanthum, its inebriating effects . . 129
Rice, wine from 211, 217, 226

Page
Rose-water, early made by the Persians, 91—quotation from a Saadi respecting, 93.
Rosolio, 41—made at Dantzic, 463.
Rubus arcticus, wine from 480
Rubus Chamæmorus, liqueur from . . . . . *ibid*
Rudkin, his plan for the collection of the duty on spirits . . 658
Rum, distillation of in the Carnatic, 158—made in China, 218—derivation of the term, 282—its manufacture in the West Indies, 283—in Brazil, 314—in the United States, 331, 334—trade of in England, . . 561
Russia, 487—revenue derived from brandy in, 490—extensive breweries, 491—mead manufactured to great extent, 494—importance of honey for home-consumption, and as an article of commerce, 495—mode of rearing bees, *ibid*—cultivation of the vine, 496—imports and exports, 520, 521—distillation a monopoly of the crown, ... 518

S

Saccharometer, invention and use of 684
Sack, derivation of the term 357
Sacki, a Japanese beer, 238—derivation of the term, *ibid.*
Saffron, early use of in Ireland 620
Sagwire, a species of palm-wine 195
Sal-Indicum, first name for sugar in Europe . . . 366
Sam-tchoo, a Chinese liquor 217
Sandwich Islands, liquors of 254
Sangaree, a drink of the West Indies 288
Saracens, opinions concerning their inventions and discoveries controverted, 21, 163, 361.
Sardinia, wines of 406
Satschio, a Japanese brandy 240
Savages of America, their feast of the dead, 350—anecdotes of their chiefs, 351
Sbitena, or Sbetin, a Russian drink, . . . 494
Scotland, primitive beverages of, 569—brewing in, 570—distillation, 572.
Sculls, used as drinking-cups, 165, 270—curious anecdotes respecting, 598.
Seneca, his complaint of women using wine to excess . . 12
Shetland Islands, distillation from heather formerly practised in . 592
Shiraz, wine of, 84—derivation of, *ibid.*
Siam, liquors of 176
Siberia, liquors used in 509
Sicily, wines of 407
Sierra-Leone, drinks used there, 73—introduction of the vine, 74.
Skins of beasts used for holding wine, 18, 19—among the Tartars, 139—in Pompeii, 140—in Madeira, 603—in Georgia, 502—among the Pampas, 311—
Soliman I., his exertions to prevent drunkenness . . . 39
Sora, a beer of Peru 306
Spain, early notice of distillation in, 362—custom of a Celtic king of, 362—early cultivation of the vine in, *ibid*—brandies of, 363—wines, 367—granaries, 374—breweries, 375—cider, *ibid*—mead of, *ibid.*
Specific gravity, 686, 690—anecdote respecting, 693.

Page
Spirits, a preservative against the plague, 39—spontaneous combustion occasioned by, 683.
Spontaneous fermentation, remarks on 665
Springs, intoxicating 466, 509
Spruce-beer, origin of in Sweden, 489—use of in Great Britain, . 550
Still, supposed to be alluded to in St. Matthew, 10—introduction of into Europe, 361—Calmuck, 142—Mysore, 159—native Indian, 160—used in Thibet and Bootan, 172—in Ceylon, 186—China, 228—the Georgian Islands, 256—Peru, 306—Canada, 342—Spain, 365—Desrone's, 393—St. Marc's, 635—Solimani's 640—Winter's, *ibid*—Sir Anthony Perrier's, 643—Grimble's, *ibid*—Evan's, *ibid* —Williams's, 644—Shannon's, 645—Gutteridge's, 646—Morrisy's, 647 —Shee's, 648—Stein's, 649—that of Mr. Coffey, 650, 651, &c.—the one formerly in use in Ireland, 657.
Sugar, cultivation of in Upper Egypt, 54—known early in India, 152—derivation of the word, *ibid*—elephants and horses fed on in India, 157—substitute for in Bokhara, 168—manufacture of in Siam, 177—in Java, 195—in Manilla, 202—in China, 230—in the Marquesas, 254—in New South Wales, 265—in the West Indies, 218, 287—in Peru, 299—from maize, 310—in Brazil, 314 —from the maple, 329, 330, 331—in Spain, 366—from the walnut-tree, 502 —from rags, 697—from beet-root, or mangel-wurzel, 702.
Sweden, use of the ant in distilleries of, 476—distillation from potatoes in, 479—
Switzerland, wine of, 449—distillation of brandy in . . . 451
St. Helena, early distillation from potatoes in, ... 281
Sumatra, beverages of 190
Surinam, liquors manufactured in 319

T

Taffia, a name for rum 285
Taffilet, wine and beer of 80
Talipot-tree, description of 200
Talwagen, a liquor of Ceylon 183
Taroot, vineyards of 49
Tartars, distillation early known to, 142—cup-bearers of, 143—their mead, 146—luxury of their princes, *ibid*—their cups and drinking-vessels said to counteract poison, 147—genius for poetry, *ibid*—their wine from lamb's-flesh, 150—their large bags, 139.
Tamerlane, banquet of, ... 149
Teutones, customs of 466
Tee-root, a liquor distilled from 254
Temperance Societies, origin of in the United States, 338—in Van Diemen's Land and New South Wales, 266—in Prussia, 449—in Sweden, 480–1—Great Britain and Ireland, 707.
Temperance, opinions of a Hanoverian Preacher respecting, 460—law respecting in China, 226—enforced by Alomprah, 175—in the Society Islands, 257—remarks on, ... 705
Teracina, a Tartar drink from rice 146
Theka, a Peruvian liquor 302
Theophrastus, practice of drunkards in his day 12

Page
Thibet, liquors used in, 171—distillation in, . . . 172
Toak, a Madagascar drink 187
Toddy, mode of procuring 155
Tokay wine, ... 428
Tonquin, beverages of, 205—sociality in, 207—cups used in, *ibid*—cider of, 208.
Torgilla, or Tergilla, challenge of in drinking . . . 13
Torquatus, his extraordinary powers of drinking . . 13
Toupare, a Madagascar drink 188
Tripoli, beverages of 80
Tuns, enormous one at Heidelberg, 428—at Köningstein, *ibid*—at Halberstadt, 428—at Tübingen, *ibid.*
Turkestan, beverages of, 150—melons of, . . . *ibid*
Turks, mode of living and hospitality of . . . 38

U

United States, distillation in, 325—cider of, 329—sugar, *ibid*, 330, 331, 332—vine of, *ibid*—rum of, 334—malt liquors, 335—honey, *ibid*—Temperance Societies in, 338.
Usquebagh, 615, 616—receipt for making, . . . 620
Usuph, a drink of Morocco 78

V

Van Diemen's Land 167
Vanhorn, his excess in drinking 13
Vegetables, various from which spirits may be produced . 681
Vienna, malt-drinks of, 444—brewers of, . . . 445
Vaults for wine, enormous 435
Vellipatty, a beverage of Ceylon 138
Vines, when first cultivated by the Romans, 11—of Persia, 85—of India, 156—of Madagascar, 188—of New South Wales, 265—of the Cape, 270—of New Spain, 299—of Chili, 307—of the United States, 333—of Spain, 367—climates suitable for, 437—cultivation of in Portugal, 376—formerly in England, 524—in Ireland, 600
Vineyards, tax on in Persia, 63—in Portugal, 373—in France, 384—in the Crimea, 499
Vintage in Germany, 427—great sports at, . . 436
Vintro de Batatas, a kind of beer 315
Vodtki, Russian brandy 519

W

Walnut-tree, sugar obtained from 502
Water-melons, brandy from 505
Watky, the Kamtschatdale name for whiskey . . . 516
West Indies, distillation of rum in, 283—exports of, 285—hospitality in, 287
Western Islands, curious customs observed at ancient entertainments in, 569—dignity and emolument attached to the office of cup-bearer, 582
Whidah, beer of, 72—skill of the woman in brewing in, *ibid*
Whiskey, derivation of the word 616

Page
Wine, supposed to be known before the flood, 2, 3—Women forbidden to drink, 12—Men forbidden the use of till a certain age, 12—Excess of women in, *ibid*—Origin of the term, 559—Pucine, virtues of, and where produced, 13—Cœcuban, *ibid*—Setine, *ibid*—Falernian, 14—Other wines used by the Greeks and Romans, 15 to 19—Shiraz, 84—Kislar, 505—New South Wales, 265—Constantia, 270—of Chili, 307—the United States, 333—Canada, 348—Georgia, 503—Spain, 367—Portugal, 376—France, 383—Mediterranean, 408—Ionian Isles, *ibid*—Corinth, 410—Hungary, 425—From pomegranates, 92—Vaults for, 435—Home-made, 556—Proportion of alcohol in different sorts, 682
Wine-taster, his duties in Congo, 69—said to have originated with the Persians, 612—the office lately abolished in Ireland, *ibid.*

X

X waters, explanation of and antiquity of its symbolical application 616
Xenophon, his account of drink in Armenia . . . 9
Xeres, wines of 369

Y

Yankee, a term for New England rum 336
Yeast 319
Yowrt, a Turkish drink 245
Y-wer-a, a liquor of the Sandwich Islands . . . 255

Z

Zabul, wine of Persia 525
Zante, wines of 409
Zealand 471
Zeher-e-koosh, delightful poison 87
Zoolas, beer of the 268
Zora, a German liquor 443
Zosimus, notice of 21
Zythum, ... 9, 10, 44, 362

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